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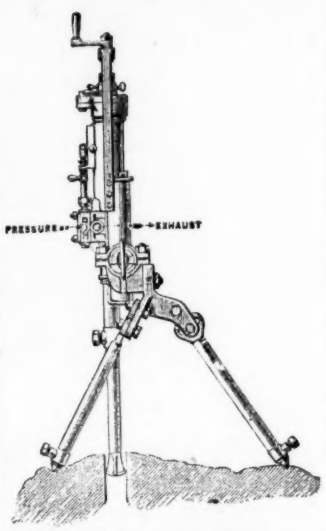

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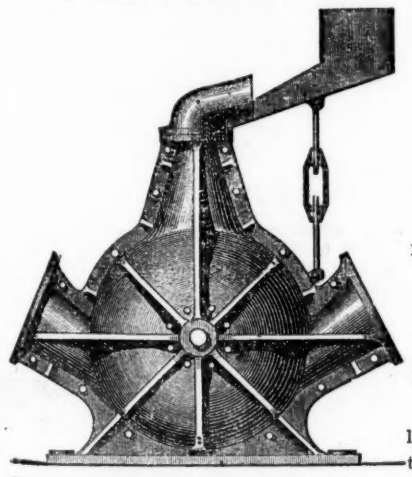

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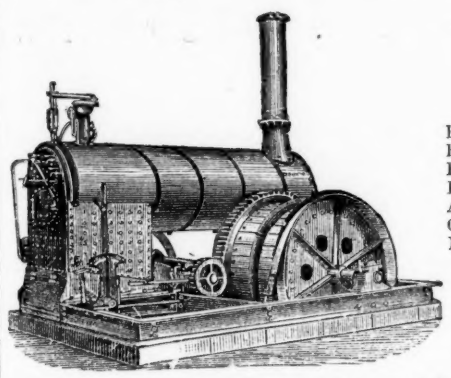

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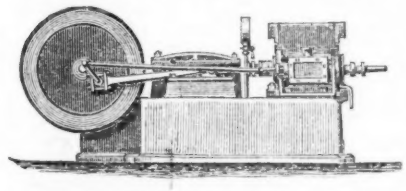

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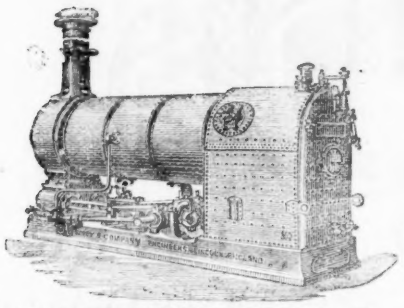

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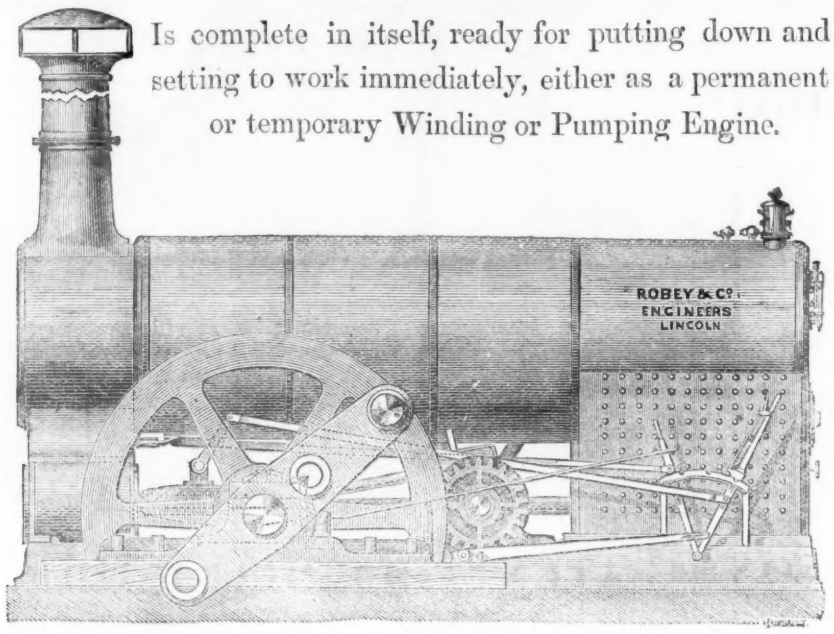

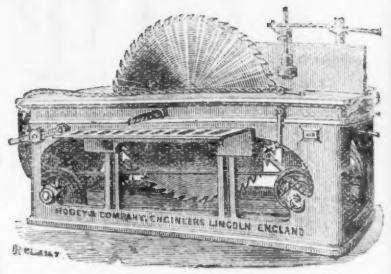

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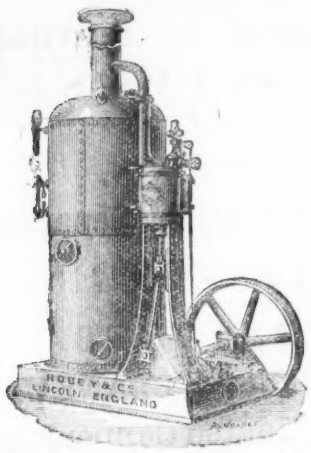

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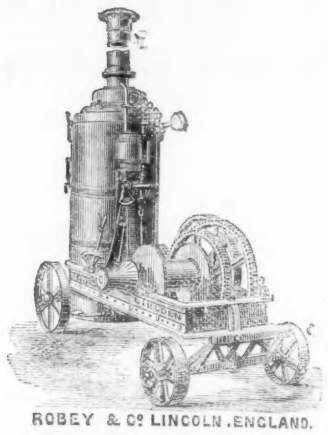

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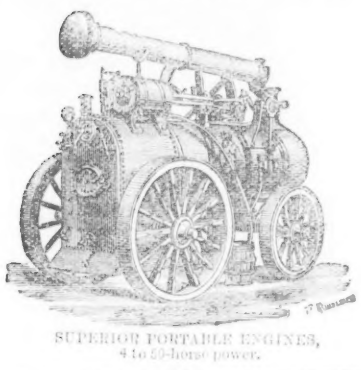

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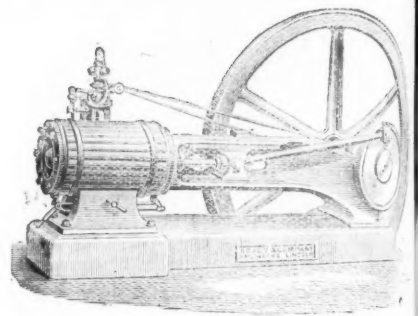

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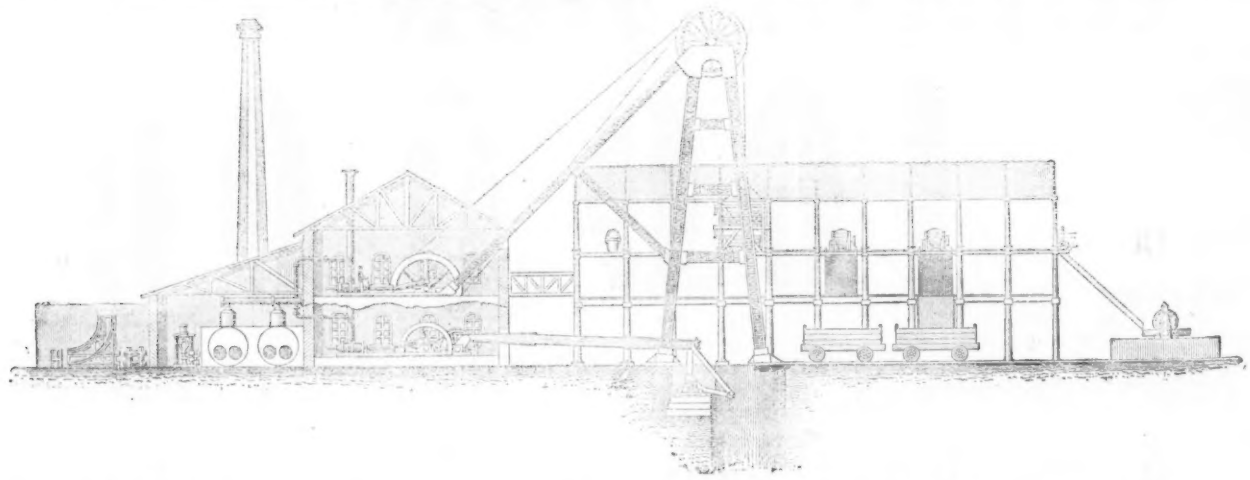

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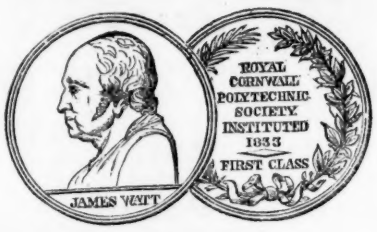

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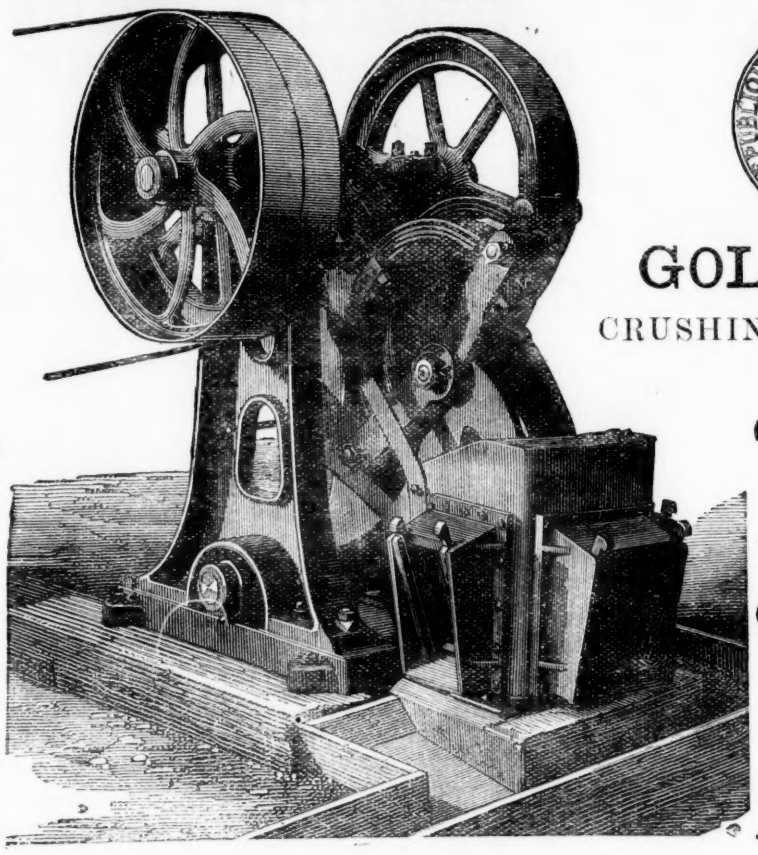

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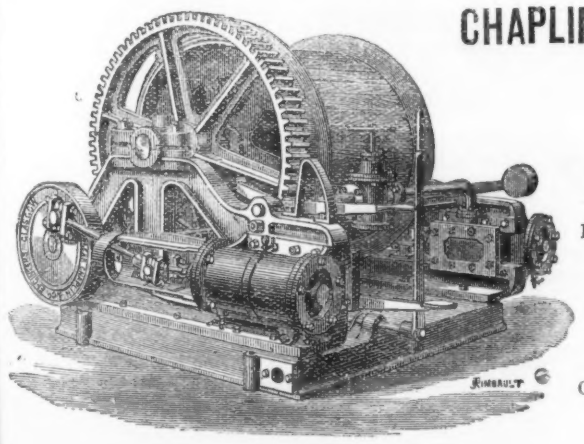

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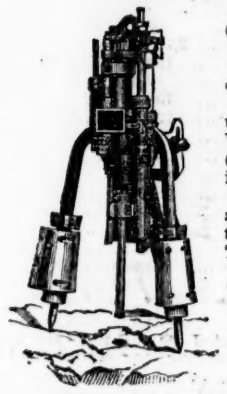

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CANNON STEEL WORKS, SHEFFIELD.

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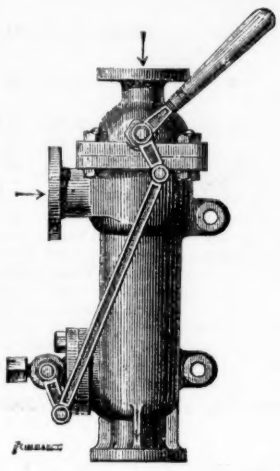

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Forces the water in the boiler considerably above boiling point, thereby increasing the durability of the boiler.
Is started by simply turning one lever.

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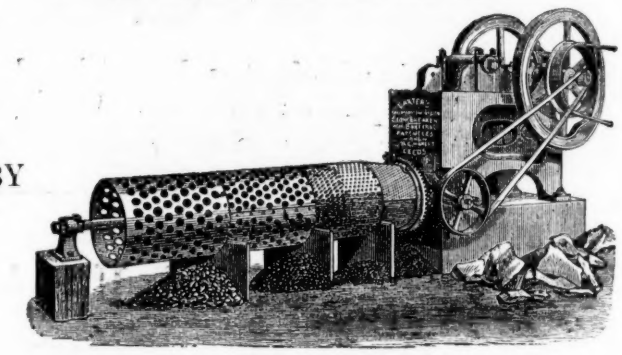

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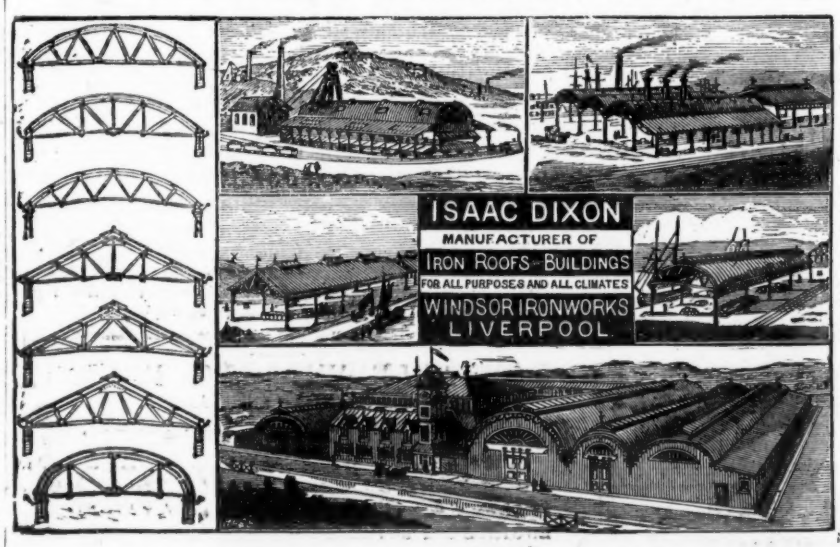

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THE MINERAL STATISTICS OF THE UNITED KINGDOM FOR THE YEAR 1880—No. III.

IRON INDUSTRIES—IRON ORE.—The increased activity prevailing during the past year appears in the output of our iron mines, the total production showing an aggregate of 18,026,049 tons, compared with 14,379,735 tons in 1879, being an increase of 3,646,314 tons. As in past years since 1872 the returns are separately distinguished, the quantities under two heads, the one of mines and workings not in the coal measures, the other the quantities of argillaceous and blackband ironstones obtained from our coal fields, the production of these latter amounting to 5,397,477 tons, of the value of 2,698,738*l.*, compared with 5,130,849 tons, valued at 2,565,424*l.* in 1879, giving an average of their ores of 10s. per ton. The production of iron ore from the mines and workings not in the coal measures in 1880, it appears, amounted to 12,628,932 tons, having a value at the place of production of 3,887,068*l.*, compared with 9,248,886 tons, of the value of 2,397,010*l.* in the year 1879.

The districts in 1880 producing quantities in excess of 1879 are the North Riding or Yorkshire, or Cleveland district, producing 6,486,654 tons, against 4,750,000 tons in 1879; Lancashire, 1,266,503 tons, against 976,822 tons; Cumberland, 1,491,383 tons, against 1,227,006 tons; Northamptonshire, 1,550,013 tons, compared with 1,211,046 tons; Lincolnshire, 1,154,584 tons, against 695,326 tons; and Ireland, 239,323 tons, against 155,838 tons in the previous year.

The annexed summary gives the total quantities of iron ore and its value in the year 1880 raised from mines and workings not in the coal measures, amounting to 12,628,932 tons, of the value of 3,887,067*l.*:—

Counties.	Quantities. Tons.	cwts.	Values. £.	s.	d.
Cornwall	15,855	3	9,845	8	0
Devonshire	12,652	15	10,023	17	6
Somersetshire	29,318	0	23,127	8	0
Gloucestershire	92,159	0	55,174	8	0
Wiltshire	67,500	0	13,500	0	0
Oxfordshire	8,360	0	1,463	0	0
Northamptonshire	1,550,013	10	231,358	17	9
Leicestershire	52,387	0	7,858	10	0
Lincolnshire	1,154,584	1	177,019	9	9
Staffordshire, North	243,378	2	27,995	16	0
Lancashire	1,266,503	14	860,959	6	0
Cumberland	1,491,383	13	1,154,613	12	0
Yorkshire, North Riding	6,486,654	18	1,135,164	12	0
Northumberland and Durham	41,357	18	24,814	0	0
North Wales	1,603	5	801	11	0
South Wales and Monmouthshire	65,566	10	36,609	9	9
Ireland	239,323	4	112,812	7	0
Scotland	5,166	0	3,921	15	0
Isle of Man	9	0	4	10	0
Total	12,628,932	16	3,887,067	17	9

An examination of the detailed production of the above ores show that those of Cornwall, giving from 50 to 60 per cent. of metallic iron, realise prices varying from 10s. to 13s. and 14s. per ton. The Somerset spathose ores of the Brendon Hills give from 15s. to 17s. per ton, yielding of metallic iron 34·65 per cent. The Gloucestershire brown hematite ores of the Forest of Dean give an average of 12s. per ton at the mines, the ore yielding from 55 to 65 per cent. of metallic iron. The iron ore of Northamptonshire, giving an average of nearly 40 per cent. of metallic iron, varies slightly, the poorer ores selling at the pits from 2s. 6d. to 2s. 9d. per ton, the better varieties for 3s. to 3s. 6d. per ton. The ores of Lincolnshire give an average of from 3s. to 4s. per ton, and contain nearly 30 per cent. of metallic iron. Turning to the East Coast red hematite of the carboniferous limestone, prices in Lancashire vary from 11s. 6d. to 14s. and 15s. per ton, the ore giving an analysis from 60 to 65 per cent. of metallic iron. The Cumberland ores of this same geological age show even higher prices than those of Lancashire. The ore raised at the Montreal Mines gave an average of 15s. per ton, the Hodbarrow ore 13s.; the Moor Row ore, raised by the Maryport Hematite Iron Company, being set down as high as 20s. per ton, the richer varieties of the Cumberland ore giving as much as 66 per cent. of metallic iron.

The argillaceous carbonates of Cleveland, producing one-third of all the iron ore raised in the United Kingdom in 1880, shows some variation; here several difficulties stand in the way of exact information of the value of the ores. A large number of the mines producing ore belong to the ironmasters, who reduce it in their own works, and for which there is no sale. Again a large proportion is delivered under contracts made many years ago, and having many years to run, at prices which are no guide to the existing value. It is, however, considered, the question having been carefully examined, that the average price per ton net at the mines may be taken at from 3s. 3d. to 3s. 9d. per ton. The aluminous and pisolitic ores of the county Antrim, in the North of Ireland, vary from 7s. to 10s. and 12s. per ton, Lithomarge giving an average of 5s. per ton.

The argillaceous and blackband ironstones of the coal measures, producing, as previously stated, 5,397,477 tons in 1880, of the value of 2,698,738*l.*, was obtained from the undermentioned coal fields:—

	Quantities.		Value. £	s.	d.
ENGLAND—					
Gloucestershire...Tons	210		105	0	0
Shropshire	226,721		113,360	0	0
Warwickshire	36,972		18,486	0	0
Derbyshire	150,248		75,124	0	0
Nottinghamshire	2,264		1,132	0	0
Staffordshire, North	1,350,315		675,157	10	0
Staffordshire, South	362,773		181,386	10	0
Somersetshire	665		232	10	0
Yorkshire	286,698		143,349	0	0
Lancashire	1,520		760	0	0
WALES—					
North Wales	41,413		20,706	0	0
South Wales	278,361		139,180	10	0
SCOTLAND—					
East division	772,043		1,329,658	10	0
West division	1,887,274				
Total	5,397,477		£2,698,738	19	0

These coal measure ironstones give an average value of 10s. per ton. A few years since, in 1877, they gave an average of 12s. per ton. The Shropshire ironstone gave an average of 35 per cent.; the Derbyshire from 26 to 33 per cent.; the North Staffordshire from 27 to nearly 40 per cent.; South Staffordshire from 34 to 42 per cent. The clay ironstones of Scotland give an average of 30 per cent. of metallic iron, and in the calcined state nearly 70 per cent., the blackband ironstone giving in the raw state 35 per cent., increased to 60 per cent. on calcination. Of the argillaceous and blackband ores raised in Scotland in 1880 clayband gives a total of 1,223,670 tons, and blackband 1,435,647 tons.

The total production of iron ore and stone in the United Kingdom in 1880, with the "burnt ore" obtained from cupreous pyrites, rich in metallic iron, and the iron ores imported, give an aggregate total of 21,086,740 tons available for reduction. The annexed summary shows the details:—

	Quantities—Tons.
From workings not in coal measures	12,628,932
Argillaceous and blackband ores	5,397,477
Burnt ore from cupreous pyrites	427,730
Iron ore imported	2,632,601
Total of iron ore returned as smelted in 1880	21,086,740

The iron ore imported in 1880 is greatly in excess of the imports of any previous year. In 1879 the imports were but 1,085,045 tons, and in both years the average value of these ores may be taken at 20s. per ton. Of the imports in 1880, including chrome iron ore, we received from Russia 15,723 tons; Portugal, 39,776; Spain, 2,278,962 tons; Italy, 176,750 tons; Turkey, 82,248 tons; and other countries, 28,460 tons of an aggregate value of 2,789,929*l.*

PIG-IRON MANUFACTURE.—The 567½ furnaces in operation in Great Britain in 1880 produced 7,749,223 tons of pig-iron. Of the above furnaces 379 were in England, 76 in North and South Wales, and 112½ in Scotland, the total quantity of coal used amounting to 16,682,629 tons. The production of 1879 was 5,995,337 tons; the coal employed in its manufacture was 13,117,411 tons.

The total number of furnaces in blast in Great Britain, and the quantity of coal used in 1880 and previous years, appear in the annexed table:—

Year.	No. of furnaces.	Pig-iron—Tons.	Coal used—Tons.
1876	585	6,555,997	15,598,381
1877	541	6,608,664	15,342,445
1878	498	6,381,051	14,112,005
1879	496	5,995,337	13,117,411
1880	567½	7,749,233	16,682,629

The following table shows in detail for the year 1880 the number of furnaces built and in blast in each iron-making district of Great Britain, the make of pig-iron, the coal used, and the average yield per furnace, and of coal used per ton of iron made:—

Districts.	Furnaces. Built.	In Blast.	Pig-iron made. Tons.	Coal used. Tons.	Average. Per Furnace. Tons.	Coal used. Cwts.
ENGLAND—						
Nothumberland	4	2	750,262	1,420,766	23,445	38
Durham	72	30				
Yorkshire, North Riding	91	80	1,656,156	3,611,543	20,825	45
Ditto, West Riding	47	33	306,560	769,519	9,270	50
Derbyshire	54	40	866,792	954,035	9,169	52
Lancashire	49	37	750,884	1,362,154	20,291	36¼
Cumberland	51	40	790,343	1,604,097	19,758	40¼
Shropshire	24	12	88,333	249,254	7,361	56¼
Staffordshire, North	36	23½	225,023	434,171	9,575	38½
Ditto, South	137	46	381,596	878,581	8,360	45½
Northamptonshire	23	17	178,714	470,165	10,512	52½
Lincolnshire	21	15	207,704	481,807	13,847	46
Gloucestershire	9	2				
Wiltshire	4	1½	37,351	97,550	10,672	53
Hampshire	1	0				
Somersetshire	1	0				
Total of England	621	379	5,752,683	12,038,642	15,180	41¼
NORTH WALES—						
Denbighshire	8	5	57,812	139,328	8,259	48
Flintshire	2	2				
SOUTH WALES—						
Anthracite Furnaces	11	4	440,915	922,155	12,970	42
Bituminous Coal Districts: Glamorganshire	74	30				
Bituminous Coal Districts: Monmouthshire	56	35	448,823	1,045,449	12,823	46½
Total of Wales	151	76	947,550	2,106,932	12,468	44½
SCOTLAND	149	112½	1,049,000	2,542,055	8,134	48½
Total of United Kingdom	924	567½	7,749,233	16,682,629	10,113	43½

It thus appears that in Lancashire, Cleveland, Durham, and Lincolnshire the quantity of coal used per ton of iron varies from 38 to 46 cwts., the coke employed being of the best hard dense variety obtained from the Durham coal field. In the West Riding of Yorkshire where coal blast is largely employed 50 cwts. is the average, while in Scotland where raw coal is extensively used the average is 50 cwts., and in Shropshire 56 cwts. per ton of iron made. The average make of the furnaces in Great Britain in 1880 was 10,113 tons, compared with 9512 tons in 1872, the quantity of coal used in the latter year amounting to 51 cwts. per ton of iron made, compared with 43½ cwts. in the year 1880. The economy attained in a period of eight years being 7½ cwts. to each ton of pig, made a saving of about 14 per cent.

The prices of the several varieties of pig-iron quoted below were as follows in 1880. The prices in each of the two previous years are given for comparison:—

	1880.	1879.	1878.
Cleveland	£2 10 6	£2 1 2	£2 2 3
West Cumberland	4 4 6	2 17 6	3 0 0
South Staffordshire	4 0 9	3 7 9	3 18 9
Scotland	2 14 6	2 10 4	2 8 6

Prices contrasting favourably with those of the previous year, towards the close of which an increased demand arose for iron.

EXPORTS OF PIG-IRON.—The total quantities shipped in 1880 amounted, according to the Board of Trade Returns, to 1,681,629 tons, of the value of 5,207,204*l.*, compared with 1,223,436 tons, of the value of 3,150,389*l.* in 1879, and 923,080 tons, valued at 2,470,162*l.* in the year 1878.

MILLS AND FORGES.—These important adjuncts to our metallurgical establishments show but little variation in 1880 compared with 1879. The number of works in each year was 314. The number of puddling furnaces in 1880 being 5134, against 5149, and the number of rolling mills 855, against 846 in the year 1879.

BESSEMER STEEL WORKS.—There are 28 of these establishments in Great Britain, the most extensive being that of Messrs. Bolckow, Vaugham, and Co. (Limited), in Cleveland, possessing six converters of an aggregate capacity of 62 tons. Of these four each have a capacity of 8 tons each, and two for the manufacture of steel by the Thomas-Gilchrist process, each of a capacity of 15 tons. The annexed presents a complete list of these works in 1880, with the number and capacity of the converters in each works:—

No.	Name and situation of Works.	No. of Converters.	Capacity of Converters.
1	Henry Bessemer and Co. (Limited), Sheffield	2	3 0
		2	5 0
2	Bolckow, Vaughan, and Co. (Limited)	4	8 0
		2	15 0
3	John Brown and Co. (Limited), Sheffield	4	7 10
		2	10 0
4	Sheffield Steel and Iron Works, Attercliffe, near Sheffield. Brown, Bayley, and Dixon (Limited)	2	4 0
		4	8 0
5	Charles Cammell and Co. (Limited), Sheffield, Cyclops	4	4 0
	Ditto Ditto Yorkshire	2	5 0
		2	7 0
6	Weardale Iron Co., Tudhoe, Ferryhill	2	2 10
7	The Glasgow Bessemer Steel Co. (Limited), Atlas Works, Glasgow	2	3 0
8	Sam. Fox & Co., Stockbridge Works, Sheffield	2	5 0
9	Lloyds, Foster, & Co., Old Park, Wednesbury	4	3 0
10	Bolton Iron and Steel Co. (Limited), Bolton	4	5 0
11	London and North-Western Railway, Crewe	2	3 0
12	Manchester, Sheffield, & Lincolnshire Railway Co., Gorton Works, Manchester	4	3 10
13	Mersey Steel and Ironworks, Toxteth Park, Liverpool	10	5 0
14	Manchester Steel and Railway Plant Co., Gibraltar Works, Newton Heath, Manchester	4	3 0
15	Barrow Hematite Steel Co., Barrow	8	7 0
16	The Dowlais Iron Co., Dowlais	2	5 0
		2	6 0
		2	7 10
17	Ebbw Vale Co., Ebbw Vale	4	8 0
		2	10 0
18	West Cumberland Iron and Steel Co., Workington	2	8 0
		2	6 0
19	Phœnix Bessemer Steelworks, The Ickles, near Sheffield. Steel, Tozer, & Hampton (Limited)	2	8 0
		2	4 0
		2	4 0
20	Carnforth Hematite Iron Co. (Limited)	2	6 0
21	Patent Shaft and Axletree Co., Wednesbury	4	3 0
22	Erimus Steelworks, Middlesborough. Chas. Emile Muller	2	6 0
23	Darlington Iron Co., Darlington	2	—
24	The Moss Bay Hematite Iron and Steel Co., Workington	3	8 0
25	Rhymney Iron Co. (Limited), Rhymney	3	7 0
26	Blaenavon Iron and Steel Co., Blaenavon	2	8 0
27	The Standard Iron and Steel Co.	2	—

In the manufacture of steel by the Open Hearth melting process of Siemens-Martin, the number of works have not increased in 1880; many of these establishments have augmented their resources by increasing the number of these furnaces.

TIN-PLATE MANUFACTURE.—There were 106 works in 1880 engaged in tin-plate manufacture, possessing an aggregate of 391 mills, of which number 290 were more or less actively employed. Of the above 106 works 9 were in course of erection building 16 mills. The total make of tin-plate reached 6,000,000 boxes, compared with 4,250,000 boxes in 1879, the actual weight of the whole being given as 237,084 tons, against 190,567 tons in 1879. Like the production of tin-plate, the exports exhibit a considerable increase in 1880, compared with 1879—the total number of tin, terne, and black plates amounting in 1880 to 4,089,160 boxes, compared with 3,534,169 in 1879, and 2,837,776 boxes in 1878. The countries receiving these exports and the respective number of boxes are given in the annexed return for 1880 and two previous years:—

Countries to which exported.	1878.	1879.	1880.
United States ports	1,931,128	2,755,421	2,959,380
Holland, Germany, and Belgium	149,640	159,962	126,805
Australia and New Zealand	63,578	42,081	80,855
Italy and Mediterranean	141,691	108,977	176,377
Canada and B.N. America	108,284	120,798	200,138
France and Switzerland	97,928	75,311	148,914
South America and Brazils	62,676	48,537	68,661
Spain and Portugal	70,101	61,225	86,179
Norway, Sweden, and Baltic	103,008	81,029	93,147
India and China	92,260	63,431	124,554
West Indies	12,033	9,346	13,626
Cape, Ceylon, and Mauritius	3,080	3,414	3,718
Africa and outside islands	5,676	4,242	4,504
Unclassed	1,693	995	2,302
Total boxes	2,837,776	3,534,169	4,089,160

According to the foregoing there appears an increase in the exports in 1880 over 1879 of 554,991 boxes, showing an increase equivalent to 15 per cent., the respective value of the exported quantities in 1880 being 822,091*l.*, against 497,075*l.* in 1879, and 630,635*l.* in 1878. The United States, as in previous years, were our largest customers, amounting to 70 per cent. of the export of 1880. The port of Liverpool shipping 2,345,247 boxes, Bristol 1,032,934 boxes, London 364,268 boxes, the remainder being shipped from other parts in Great Britain.

The volume of Mineral Statistics for 1880 contains much useful information regarding the localities and production of our iron mines, and the several works and firms engaged in pig-iron manufacture and of tin-plates.

Original Correspondence.

MINING IN NEVADA—THE GREAT COMSTOCK, &c.

SIR,—You will see by the enclosed that the Great Comstock has produced more wealth than any lode in the known world. With only twenty years' operations the depth obtained is greater than the tin or copper mines of Cornwall, that have been worked unceasingly from the time of the Romans. The Comstock is now producing but little, but every indication goes to show that in a short time she will be as good as ever, and her owners will realise handsome profits. If unfortunately they should find nothing as depth is attained, enough low grade ore is known to exist in the upper workings to yield millions on millions of dollars, and at a very small cost, as compared to extracting ore from the deep and hot workings of the lower levels. At no late day the Comstock is destined to shine again as brilliant as in times past. There are other mining districts in this great mineral state of Nevada that will prove as good as the Comstock if given the same show in prospecting and developing, notably among which is the EUREKA DISTRICT, which now stands second, and I think, when worked as long as the Comstock, will equal her as a bullion producer. The Richmond Consolidated and Eureka Consolidated are to-day the two biggest mines in the world, and everything shows from present indications that when worked as long will produce as much as the celebrated Consolidated Virginia and California Mines of the Comstock, which have produced in the aggregate $111,707,608, and disbursed in dividends to their fortunate shareholders $74,250,000.

The Eureka Mines have this great advantage over the Comstock, they are not as deep nor as hot, which effects a saving every month of a great many thousands of dollars. The Richmond has years of dividends in sight without any further developments. Her vast ore chambers extend from the "grass roots" to the bottom level, and the beauty of the mine is it shows no signs of "petering." Every level they open up in depth is better than the one preceding. This company has a valuable property, and the management for economy and mining engineering cannot be excelled in America or the mining world.

The Ruby and Dunderberg Company of Eureka have a very fine and valuable property in the heart of the Great Base Metal Range, and when properly opened up to extract large quantities of ore it will have to be taken from the non-dividend foreign list and placed in the list of foreign dividend paying mines by the side of her sister the Richmond Consolidated.

The Silver Chloride mines of Candelaria (Nevada) never looked better than at present. The Northern Belle in this district have paid in dividend more than two million of dollars, and not one penny has been called on from the stockholders for assessment. They have ore enough in sight to pay dividends for a long time to come. They disburse their dividends monthly—75 cents per share per month. This company own 1500 ft. on the lode by 600 ft. across. Two first-class 20-stamp mills, with all the modern improvements, &c., for working silver ore, and two Stetefeldt furnaces, each having a capacity of roasting 100 tons of ore daily. The plant and machinery of this company is as fine as any in the State. It is divided into 100,000 shares, and is selling to-day in the San Francisco Stock Exchange Board for $1,500,000. There are other mines in this district when after proper development will be found equal to the famous Belle.

Aurora, Esmeralda, Co. Nevada, Aug. 21. CHLORIDE M.

THE UPS AND DOWNS OF THE COMSTOCK.—Lloyd Tevis, President of Wells, Fargo, and Co., in an address recently delivered before the American Bankers' Convention at Niagara Falls, gave the following statement of the amount of precious metals produced in the States and Territories west of the Missouri River, deducting amounts from British Columbia and west coast of Mexico, during the years 1870 to 1880:—

1870	$52,150,000	1876	$57,210,859
1871	55,784,000	1877	95,811,582
1872	60,351,824	1878	78,276,167
1873	70,139,860	1879	72,688,888
1874	71,965,610	1880	77,232,512
1875	76,703,433		

The foregoing statement includes the lead and copper which result from the smelting of the base bullion ore of Nevada, Utah, and Colorado.

The product of the precious metals in this State for the past four years was as follows:—1877, $51,580,290; 1878, $35,181,490; 1879, $21,907,714; 1880, $15,031,621. The enormous decline of the product of last year as compared with that of 1877, amounted to $36,584,679, is mainly due to the decreased product of the Comstock, which in 1880 yielded but $5,312,592 as against $37,911,710 in 1877, a falling off of $32,509,118. But some of the other districts have also declined, as for instance the Eureka, which yielded $4,649,025 in 1880, as against $5,040,261 in 1879.

A synopsis of the highest and lowest quotations of the mining stocks dealt in at the San Francisco Board during the past six years is given, which recites the following significant figures:—

Aggregate value of mining stocks on S. F. Board, January, 1875	$232,505,404
Aggregate value of mining stocks on S. F. Board, July, 1881	17,902,700
Shrinkage	$264,402,7 4
Highest value Con. Virginia, January, 1875	$75,600,000
Value Con. Virginia, July, 1881	945,000
Shrinkage	$74,655,000
Highest Value of California, January, 1875	$84,240,000
Value California, July, 1881	351,000
Shrinkage	$83,899,000
Highest value Sierra Nevada, September, 1878	$27,000,000
Value Sierra Nevada, July, 1881	$25,000
Shrinkage	$26,175,000

According to this statement, which is doubtless correct, the shrinkage in the quoted value of stocks, mainly of Comstock mines, during the past six years has reached the enormous sum of $264,402,704.

There are many who will take a pessimistic view of the above startling summary and endeavour to wrest the figures into condemnation of mining and the pursuit of wealth as stamped in evanescent colours on the certificates of stock values, which have exhibited such remarkable powers of expansions and equally vigorous force of contraction. Such a view may be a grateful one to some, and may open a vast chilling perspective dear to the cautious Bostonian or frigid speculator of the Quaker City, but to the average Utopian of this immediate section it will have none but a revivifying effect. Hope springs eternal in the Comstock breast, and the shrinkage in stocks of some $264,000,000 impresses the hopeful denizen of Mount Davidson merely as an immense vacuum in value which may yet be filled up by active inflation of the very stocks which have s

seriously collapsed. And there is this consoling thought that if in the near future prices do not reach such extravagant figures as in the past, they are at least likely to have more lasting values, based on the solid backing of ore which promises soon to be shown up.

COMSTOCK DEPTHS.—The lowest points reached to date (Aug. 15, 1881) in the leading mines of the Comstock are as follows:—

Alta	Depth 2150	Gould and Curry	Depth 2130
Andes	480	Hale and Norcross	2475
Belcher	3025	Mexican	2900
Bullion	2480	Ophir	2900
Best and Belcher	2130	Potosi	2400
Crown Point	3000	Sierra Nevada	2700
Chollar	2400	Union	2700
Con. Virginia	2500	Utah	2385
California	2650	Yellow Jacket	3040
Forman Shaft	2126		

SOUTH AFRICAN DIAMOND MINING.

SIR,—Your remarks in the Journal of Aug. 20 about cautions being required by those who do not possess the requisite amount of knowledge of the South African diamond mining matters are very true, and I trust that the *Mining Journal* will continue freely to ventilate the subject of the South African diamond mines, as the stock of dividend-paying companies suffers from the numbers of inferior mining projects that have been put forward lately. I do not think that correspondents sufficiently appreciate the fact that no two diamond mines are alike either in quantity or quality of the diamonds produced, or that no one mine gives anything like equal results from all the claims existing within it, and I fear that your remarks are calculated rather to mislead the uninitiated when you say that two-thirds of the claims are entitled to two-thirds of the profits. As an instance of the fallacy of considering the several diamond mines as a whole I beg to refer you to the first annual report of the Kimberley Central Mining Company, published in the Journal some little time ago, from which you will see that the net profits of the company during the first year of its existence were roughly speaking 100,000*l.*, which, according to the article in question, would be more than half the net profits earned on the whole fields during the best year's work. The above company at the commencement of the year consisted of 19¼ claims, but during the year was increased to 75¼. Now Kimberley Mine alone contains about 400 claims, some equally rich, though some very inferior, whilst De Beers, Dutoitspan, and Bultfontein contain each of them a far larger number of claims.

With reference to the anxiety of the holders of diamond mining stock to exchange the same for British gold I would again refer my readers to the above-mentioned report, from which you will see that only 143 out of a total of 5768 shares have been transferred to other than the original holders of the property, and if the share-lists of Kimberley Mine are consulted you will, I think, find that this is not a solitary exception to the remarks contained in the article referred to in your issue of the 20th instant. Your correspondent appears to think that because 28 claims are put before the public at a value of 893*l.* per claim that 8000*l.* per claim is necessarily far too much to ask for any other ground. As I am unaware in which mine the said claims are situated, as well as in what part of the mine (both matters of the utmost importance), I am unable to form an opinion as to their value; but I would point out that one company in Kimberley Mine, who stocked their claims at the large sum of 25,000*l.* per claim, paid a dividend of 9 per cent. on that sum at the end of the first quarter, which I take it is a good reason for considering not only each mine by itself, but each group of claims within that mine.

As for the daily increasing difficulties of working I may say that from the first such has been the case; but, as they have been successfully met and dealt with up to now, I see no reason why they should not continue to be met with, seeing the enormous advantage that combination hitherto almost untried gives in dealing with matters of this sort. The remark that Kimberley is little better than an enormous cesspool is about as much overdrawn as it would be to say that the Thames is an open sewer, although both would probably admit of much improvement.

As your correspondent seems anxious to know the size and quality of the South African diamonds [for which the price is quoted] I may say they are of all sizes, from the large river stone of 288 carats down to stones of ¼th and 1-32nd of a carat, and include what I believe to be the most perfect stone as to water and fire in the whole world—the Porter Rhodes diamond of 150 carats, found in Kimberley Mine, as well as large and small pieces of bort. Each mine yields diamonds that have their own individual peculiarities, so that diamond buyers can usually recognise the produce of each. With reference to the enhanced values I may say that since the first great fall in the value of diamonds eight or nine years ago there has been a steady demand at gradually, if slowly, increasing rates for all classes of diamonds produced. That this is likely to continue is shown by the fact that whenever any large portion of Kimberley Mine has been stopped by a fall of reef or by water there has been a corresponding enquiry for diamonds at increased prices, which has the effect of bringing ground in that and other mines into work, though previously it had been unremunerative—another reason for keeping each mine as well as each block of claims in that mine distinct.

ONE INTERESTED IN THE DIAMOND FIELDS OF SOUTH AFRICA.

Aug. 26.

INDIAN MAMMOTH GOLD MINING COMPANY.

SIR,—In last week's Journal our client, Mr. J. W. Minchin, is described as a promoter of the above company. This is not the case. Mr. J. W. Minchin never acted nor held himself out to others as the promoter of this company. We shall feel obliged if you will publish this in your next issue.

PYKE AND MINCHIN.

Lombard-street, Sept. 15.

INDIAN MAMMOTH GOLD MINING COMPANY.

SIR,—A short paragraph appeared in last Saturday's Journal in reference to this company. Allow me to point out what I think must be an error. It is stated that "Mr. Minchin, of Sea View, Isle of Wight, was vendor and promoter." If the former be correct then he was actually the person who wrote the report on the property. I take from the prospectus—by my side—the following extract:—"These (the galleries or adits) were visited and explored in June last by Messrs. Laing, Cookesley, and Minchin, and the reports of Messrs. Laing and Minchin accompany this prospectus"—the Indian Mammoth. Again, I cull from this interesting prospectus that "Mr. Minchin, perhaps the highest authority in the Wynaad on all subjects connected with 'planting' and gold mining, gives a value which according to careful computation would produce on the spot, for timber alone on the company's estates, more than sufficient to purchase the whole estate." How can Mr. J. W. Minchin be the vendor in face of the following extract from the prospectus:—"The only other agreement entered into on behalf of the company is one for acquiring the property, dated Aug. 12, 1880, and made between Edward Murray Cookesley, of the one part, and Alfred Charles Duval, on behalf of the company, of the other part." Will Mr. Burke, an ex-director of the company, kindly pen a letter to you about this company. It would be interesting reading.

ARGUS.

THE INDIAN GOLD MINES.

SIR,—I have just seen an extract from the Journal of July 16, containing some criticisms by a "Practical Miner" on a letter which I sent some time ago to an Indian daily newspaper—the Times of India—concerning the Kolar gold fields. The criticisms require no answer—the absurdity of the misreadings upon which they are based being a sufficient one. In justice to myself, however, I wish to point out how gross this misreading has been. Here is one instance out of several. The "Practical Miner" writes—"Your correspondent says in the Kolar district the ground is not broken up or disturbed by, I suppose, cross-courses or intersections of any other strata; but simply the reefs are confined between two well-defined walls of exceedingly hard gneiss, almost like a fine-grained granite." Pray, Sir, be good enough to compare this with the following, which I did say—"The geological features of Kolar, again, are different from those of the Wynaad. In the latter the rocks are composed of gneiss; the mountains of an exceedingly hard highly metamorphic gneiss, almost like a very fine granite; and the plateau of a softer gneiss in various stages of decomposition. It is in the latter that the workable reefs occur. In Kolar the hills, where there are any, are composed of a curiously hardened rock, as hard almost as flint; and the rocks in the flat land where the reefs occur are of blue and grey slate, changing on the west into schist, and finally into granite, in which latter all trace of gold is lost. The field is intersected with a few walls and dykes of trap-rock." I need give no other instances of bad quotation—this one instance is a specimen of the whole. And where the readings of my statements are so incorrect the inferences drawn from what I have said are naturally incorrect also. I hope your correspondent, the "Practical Miner," has been misled by a murdered copy of my letter. If he has not then he lays himself open to the charge of having undertaken to criticise without being competent to do so.—*South Wynaad, Aug.* 19. A. N. PEARSON.

THE AFRICAN GOLD FIELDS.

SIR,—Permit me to point out one or two small errors in Commander Cameron's paper on the West African Gold Mines, read before the British Association at York, and noticed in last week's Journal. Axim was not "ceded to us by the Portuguese before the Ashantee war;" but, in common with many other points on the Gold Coast, was given to us by the Dutch, in exchange for Achin, prior to the last Ashantee war, which terminated in the capture of Kumasi by the force under the command of Sir Garnet Wolesley. The firm alluded to by Commander Cameron as possessing "proper mining plant, with mill-stamps and houses," is that of Messrs. F. and A. Swanzy, of Cannon-street, and not Mr. F. A. Swansea.

Having recently returned from the Gold Coast in the same steamer as Commander Cameron, after a visit of six months to the West African gold mines, I am able to confirm the statements of that gallant officer as to the richness of that country in gold. I travelled over a large district, and not only visited the mining works of Messrs. Swanzy and of the various gold mining companies at and near Tacquah, but also "prospected" over considerable tracts of country both east and west of the River Ankobra, washing samples of alluvial and of quartz wherever I went, and did not in more than three instances fail to find more or less trace of gold in what was "panned" under my inspection, whilst in several cases the richness of the ore was very great. I sincerely hope that British capital and enterprise may shortly be employed on a large scale in developing the long-neglected gold fields of the West Coast, which will undoubtedly yield enormous results when properly worked; but in order to ensure this in the shortest possible time a railway from the coast to the mining districts should be constructed without delay, Government aid being applied for, as in India.

As regards climate I may speak with some authority, having passed the greater part of the last 30 years on various parts of the West Coast. With ordinary care and prudence Europeans need not dread the Gold Coast, more especially with a line of steamers calling almost every week at Axim. When better dwellings and other comforts are provided at the mines the European staff should suffer less from climatic influences than residents on the less salubrious coast line, usually inhabited by merchants and traders, who frequently remain in the country for three or more years on a stretch. I myself resided on the West Coast for 10 consecutive years, and could name several similar instances of prolonged residence. F. R. C. S.

London, Sept. 12.

MINING IN MEXICO.

SIR,—Before leaving England I promised to inform my friends, through the Journal, regarding the Mines and Mineral Wealth of New Mexico. I have been all over the Cerillos and White Oaks districts, and examined them carefully, and must say they are in their present state of development very far from what they are reported to be. Smelters have been put in, and so far the company has failed. No water, for one thing; ore not rich enough to pay. I write this hurriedly, as I am on my way to Old Mexico; but will write you fully from some point there.—*New Mexico, Aug.* 29. J. SWAN, M.E.

MEXICAN ORDINARY RAILWAY STOCK.

SIR,—The anticipation indicated in a recent letter you were good enough to insert respecting Ordinary Mexican Railway Stock receiving an early dividend appears likely to be realised very shortly in the shape of a 6 per cent. dividend. Not long ago its shares could be bought for a trifle, even now the 100*l.* stock is only 88 to 89. Would some kind reader kindly tell me why Metropolitan Railway stock paying 5 per cent. is about 121*l.*, while Mexican Ordinary stock about to pay 6 per cent. is at 88 to 89? OBSERVER.

RAILWAYS IN NEW SOUTH WALES.

SIR,—As so much English capital is now invested in our debentures, it may interest some of your readers to know how far it has been spent in our railways, and its present and prospective profitableness, always taking into account the fact that more than half our present wool export goes through Victoria and South Australia, and that nearly all that, besides the return station supplies, will be secured to Sydney by our railways within the next few years. In the report of the commissioner for railways for the year 1880, laid upon the table of the Legislative Assembly yesterday evening, the transactions during the year are thus summarised:—

"The total expenditure for construction was 13,042,041*l.*, of which the sum of 11,778,819*l.* was expended on lines opened for traffic. The net earnings were 513,219*l.*, yielding 3·94 per cent. to the total capital expenditure, and 4·36 per cent. to the capital expended on lines open for traffic. At the close of the year 849½ miles of line were open for traffic, and 347 miles were in course of construction. The rolling stock consisted of 215 locomotives, 490 coaching, and 4443 goods vehicles. The cost of the railway materials, in the conveyance of which 101 vessels were employed, amounted to 321,703*l.*, and the freight and insurance to 36,954*l.*, making a total of 358,657*l.* During the year 84,909 trains, of which 52,581 were passenger and 32,328 goods trains, were run a distance of 3,239,472 miles. The earnings amounted to 1,161,017*l.*, and the working expenditure to 647,719, or 55·79 per cent. of the earnings; 5,440,138 passengers travelled, of whom 1,495,662 were first-class, and 3,944,476 were second-class. Included in these figures are 12,375 season-ticket holders, representing 1,638,324 journeys. The proportion percentage of these classes is for first class passengers 15·10, second-class 54·79, and for season-ticket holders 30·11. The merchandise traffic consisted of 793,493 head of live stock, 224,603 bales of wool, 1,123,166 tons of minerals, and 522,773 tons of general goods. The earnings per mile open were 1475*l.*, the expenditure was 823*l.*, the net earnings were 652*l.* The earnings per train mile were 86·02d., the expenses 47·99d., and the net earnings 38·03d. There was an increase of 164,151 in the number of first-class passengers, of 646,777 second-class, and 311,345 in the journeys made by season-ticket holders; also an increase in the receipts of 70,199*l.* from coaching traffic, and of 138,451*l.* for goods traffic—making a total increase of 208,650*l.* The interest upon capital invested in lines open for traffic increased from 3·34 to 4·36 per cent."

Of course, if the lines were private property they would pay very much better, as, however hard Mr. Goodchap (the commissioner) may strive to protect the interests of his special department, the political pressure brought to bear upon the Government in a small community like ours is able to secure concessions to a great extent, book in fares on some lines, and tonnage rates on others, and read in the light of this it is satisfactory to see that despite all this handicapping the profit on the lines at work is greater than the interest we are now borrowing at. Mr. Goodchap goes on to say—

At the termination of this report upon the railway transactions for last year it will not be considered inappropriate for me to allude to the liberal provision recently made by Parliament, by which the additional sum of 7,626,500*l.* has been voted for carrying out the policy of the Government in connection with railway extension, and also to the favourable light in which the loan to be raised for this purpose is looked upon in the London market. To everyone who takes an interest in the welfare of New South Wales it must be highly gratifying to learn that at the great seat of commercial enterprise in Europe so large an amount of confidence is felt in the stability and progress of the colony, and still more gratifying to know that in view of the magnitude and variety of the material and social advantages which must follow the development of our railway system, such confidence is well founded. It may be safely expected that by bringing the great centres of population into direct railway communication with each other one of the most important of these advantages will be speedily realised in the establishment of a community of interests between all the colonies of the Australian Continent.

And in the last paragraph he shadows first what must eventually be the case that Sydney as centre of the coal beds and of the colonies generally will be the natural *entrepôt* of trade, and if "frozen meat" proves a commercial success of that branch most especially, as our lines, will secure the bulk of the Queensland stock market, and much of the other colonies also, whilst as to the supply that will only be limited by the demand from Europe. And as for quality, let some of your readers test the shipment from the "Orange Meat Freezing Company" shipped per Cuzco (sailing to-day), and see if the American beef or mutton can be for one moment compared with it!

Could our public creditor "sell us up" to-morrow our railways would probably meet all our liabilities, or at any rate so near it that our 170,000,000 acres of yet unsold public estate would not need to be much dipped into for the small (comparatively) remaining balance, if even any at all.—*Sydney, July.* R. D. ADAMS.

P.S.—At this present moment we have 958 miles open (which by the end of this year will be 1000), whilst for the next three years 250 more miles annually will be opened, so that by 1884 we shall have 1750 miles in full work, and by 1885 the whole 2219 miles now voted for.—R.D.A.

QUICKSILVER.

SIR,—In enumerating the present rate of consumption of the above, in my letter in last week's Journal, the rendering of the quantities was entirely altered in the addendum by your compositor of £ before the totals. I ask your insertion of this in correction, as the different reading is of moment when used in comparison. At the same time, I would call attention to the bearing of the following figures as constituting an anomaly seemingly incapable of explanation, the high prices of 1875 not being exceptional:—

	Californian production. Bottles.	Californian export. Bottles.	Highest price.	Lowest price.
1875	53,000	28,960	£24 0 0	£9 17 6
1880	55,000	44,719	7 15 0	6 7 6
	Increase production.	Increase export.	Fall in highest price.	Fall in lowest price.
1880 over 1875	2,000	15,759	16 5 0	3 10 0

That the solution is not in an increase of production compared with a diminution of consumption is evident from statistics:—

	Total production. Bottles.	Estimated consumption. Bottles.	Excess production. Bottles.	Deficient production. Bottles.
1875	110,400	85,000	25,400	—
1880	115,800	120,200	—	4,200

Thus, the consumption has in the last five years overtaken the production, and is now trenching on any surplus over in past years; also, it is apparent from returns that the London exports this year are improving, standing—1880, 16,072 bottles; 1881, to Aug. 31, 16,000 bottles.

Treating Californian on the same method an increase in their consumption is also observable—1880, 44,719 bottles; 1881, to June 30, 24,000 bottles.

Therefore, I am assured that to expect animation in this market on a slightly increased demand is not sanguine, and the present price is but due to a "time of despondency, and even of panic."

Roydon, Sept. 13. INVESTIGATOR.

QUICKSILVER, AND ITS PROSPECTS.

SIR, On June 25 you published "Investigator's" letter, which contained the following:—

"QUICKSILVER.—The above is an article whose market value should at no distant date receive an immense impetus by reason of its absorption in the extraction of gold from the matrix of quartz," and "long before the year closes," &c.

And our letter, see July 2, in reply to "Investigator"—

"That the successful development of gold mining should increase the price of quicksilver, but are not so sanguine that the market value at no distant date should receive an 'immense impetus,' especially as he says 'long before the year closes.' We are rather inclined to believe that a permanent improvement will be gradual."

"Investigator," in reply to us, see July 9—

"The price 26*l.* to those acquainted with this article's elasticity in value is not an impossibility ultimately; however, when writing of an 'immense impetus' it was not that of somewhat visionary dreams, but an acquisition of 25 to 50 per cent. (say) 30s. to 60s.—surely an 'immense impetus.'"

Same day you, Mr. Editor, report—

"QUICKSILVER.—The importers of Spanish raised their price on Monday to 6*l.* 7s. 6d., and again on Tuesday to 6*l.* 10s. There has been active speculative enquiry, but not much demand for export, nor does an improvement in this respect appear likely, inasmuch as the Californian market is without alteration, notwithstanding the advance here. The exports last month were 1413 bottles, and for the six months ending June 11,453 bottles, or at the rate of about 23,000 bottles per annum, so that, with even the most liberal estimate for home requirements, the consumption remains considerably below our average yearly receipts of 43,000 to 50,000 bottles."

"Investigator," July 16—

"As the recent upward movements have borne out to some extent the calculations which induced previous communications in your columns," &c.

Mr. Editor's report—

"QUICKSILVER has relapsed into quietude. Importers of Spanish quote 6*l.* 10s., but we do not hear of any transactions, and there are sellers from second hands at 6*l.* 7s. 6d."

"Investigator" concludes his letter of last week as follows—

"Writing in the Journal—June, July—I foreshadowed my opinion of this market's prospects on the devevelopment of Indian properties. I now confirm all written, only regretting the lethargy of those officials whose torpidity has prevented this industry being established on a sounder basis ere this."

We are still of opinion as we were on July 2, when we wrote—"We are rather inclined to believe that a permanent improvement will be gradual." To this the following figures seem to point—

JANUARY TO AUGUST INCLUSIVE.

	1880.	1881.
Export—Lbs.	730,298	1,116,852
,, Flasks, about	9,672	14,792
Import—Lbs.	3,348,760	3,483,467
,, Flasks, about	44,354	46,138

Should the exports go on at the same rate to end of year, and an increase take place in home consumption, the whole of the imports would not be absorbed. Our opinion is formed from what we know of the article. As to whether the present low price of 6*l.* 5s. might force producers into a combination we cannot say.

Great Tower-street, Sept. 14. JOSEPH BENNETT BROS.

BRAZILIAN NEWS.

SIR,—Your budget of so-called Brazilian News from "Sebrato" and "Verdad," in the Supplement to the Journal of June 18, appears to some of us over here to be rather the promptings of personal pique than news. "Sebrato" tells us that the Emperor has been and seen the nakedness of the land, &c. Where was "Sebrato" raised? and who that has travelled from Rio de Janeiro to Barbacena—the present terminus of the Don Pedro second railway—has not been struck with the beauty and fertility of the country. Coffee plantations extending for miles, and apparently interminable tracts of maize, the comfortable and luxurious dwellings of the planters, surrounded by delightful gardens, with all the wealth of tropical verdure, fruits and flowers, which, with the varied plumage of birds and gaudy butterflies, makes up a scene to be remembered. And what a future there is for Brazil when the country is opened up by railways, populated, and cultivated; there will be support for teeming millions of people, with a moderate amount of labour.

"Sebrato" hints that it was a most unfavourable time for the Emperor to visit Morro Velho. Why? Surely the present and prospective returns of the St. John del Rey Mines are a sufficient answer, the admixture of killas and quartz notwithstanding. It is asserted by "Sebrato" that "Verdad" has "good means" of judging the St. John del Rey Mines. Question! Is it information surreptitiously obtained from a dissatisfied employee or two when looking for pastures new? "And the splendid hospitalities must have been very costly, and it must be a source of congratulation to the shareholders that under the present depressed circumstances the managers spared no expense to entertain the Emperor." Just so, "Sebrato;" and it is to be hoped that no shareholders exist who have ever heard or read of the Emperor's scientific knowledge and liberality in the encouragement of commerce, agriculture, mines, railways, steam navigation, and the development of the country generally who would not have felt it a gross insult to themselves individually, and the company in particular, if the managers had spared any reasonable expense to welcome and entertain the Emperor of Brazil at Morro Velho.

At North del Rey we are happy to hear that "the new ram machinery was working splendidly, and that reports were rife of a favourable discovery at Pitangui; but it was feared that Santa Barbara or Pari Mine will not amount to much—(but are you a buyer or seller?)—and, unfortunately for the Santa Barbara Company, Capt. Thomas Richards, under whom the mine made such favourable progress when Mr. Hilcke was director, has suddenly left." It would be interesting to know on what data "Sebrato" grounds his assertion, or by what standard he pronounces the Santa Barbara Company to be unfortunate in losing an agent. Is it because the returns have been considerably increased since he "left suddenly," or in what

other particular? Perhaps "Sebrato" will kindly inform us when next he grips his pen.

"Verdad," in view of the fact, says that his remarks made in connection with the St. John del Rey Company may be verified. Verily "Verdad" is almost tempted to become a prophet (of evil) to that company; but he qualifies it by adding—"I do not mean to say that the St. John del Rey Mine is entirely worked out. Some good dividends may be earned yet; but, nothwithstanding, they have forfeited the friendship of new companies ("Verdad's"), who will take when they are wanted their officers and men not on contract." But what is there remarkable about men "not on contract" changing places? and it also happens at times that the management is glad to get rid of some who are not, and would be happy to be rid of others who are on contract, and even "Verily Verdad" to be welcome to them.—*Minas Geraes, Aug.* 12. A. R. O.

MINING IN SOUTH AUSTRALIA.

SIR,—There has been some excitement for the past three or four months in consequence of fresh discoveries of gold, several rich reefs of auriferous quartz having been found in various parts of the colony, and over a large extent of country. The most advanced of these reefs, as to its working, is that of Wankaringa, 200 miles north of Adelaide, where the Alma Gold Mine is being reworked with vigour after many months of idleness. The Lady Alice, at Barossa, is also about to be again worked, having been purchased by a company, which will commence operations shortly. On the oldest of our gold fields —Echunga—several very promising auriferous reefs have also been opened, and are now in course of development. The opinion is held by many persons that if the working of these reefs is steadily persevered in we shall rival Victoria in our production of gold. The precious metal has been found at intervals from Encounter Bay in the south to Yudanamutana in the north, a direct distance of 500 miles, and over an area from west to east varying from 20 to 40 miles. In the hills and gullies of the Mount Lofty range, from 5 to 30 miles east of Adelaide, gold is being got, the returns from many localities being very rich. Hitherto the few gold mining companies that have been formed in South Australia have, with one or two exceptions, collapsed from want of good management, of sufficient capital, or of enterprise to raise more when it was required. It has been remarked that in this colony our gold mines have been stopped just at a time when their working should have been pushed on with increased energy. In common with many experienced men, it is my belief that if less than half the amount of enterprise were shown here that is exercised in Victoria with reference to gold mining we should have had equally satisfactory results. We have not sunk for gold 300 ft. vertically from the surface, while in Victoria they are working at six times that depth, and the Diamond drill has bored into a rich gold bearing reef 9 ft. thick at over 2000 ft. from the surface. There are, however, indications of the dawning of a new era in gold mining in South Australia. Two or three first-class captains have been engaged who have had many years practical experience in Victoria, and they have expressed a very high opinion as to the prospects of our gold reefs here. There are some persons amongst us sensible enough to go in for development instead of being disappointed if their mine does not pay a dividend after three months scratching about the surface. If the development system had been carried out in the past our mines, and the pockets of many speculators, would have been in a far more satisfactory position than they are.

Our operations, at least those on anything like a fair scale of mining, have been for many years too much confined to copper, and the fact appears to have been almost lost sight of that we have a great variety and a vast extent of other metals and minerals, the working of which might prove as remunerative, or more so, than that of copper. Some attention has lately been directed to the existence of silver in the colony in other combinations besides that generally thought the most common—lead. I believe it exists also in combination with iron, and in its own special ores. Red silver ore yielding 56 ozs. to the ton has been thrown away in the belief that it was merely gossan, and rich carbonates of lead with silver have been wasted owing to ignorance of their value. Some of our oldest galena (silver-lead) mines at Glen Osmond, four miles from the city, are about to be re-worked, the silver showing richer as the sinking is carried deeper. We have also nickel, platinum, cinnabar—the latter only found in very small quantities at present—antimony, antimonial lead, arsenical pyrites with silver, tin in two localities, iron, and manganese in rich abundance, plumbago, molybednum, and other metals. Tin is not much known here; in fact, very few persons are aware of its existence, and it has not yet been worked. With the introduction of more capital, and some practical geologists and mineralogists, I believe this colony would prove second to few on the face of the earth for mineral wealth. The progress of railway construction will greatly aid its development. I mentioned in my last that there were rumours of coal discoveries. These have since increased, and boring for black diamonds is going on in three or four widely distant localities, though professional geologists have generally pronounced against the existence of coal in South Australia.

Sydney, July. J. B. AUSTIN.

GELLIVARE IRON ORE EXPLOITATION.

SIR,—Permit me to crave reference to my lengthened contributions in the Journal with respect to this important subject. Hard facts and exact statistics commend themselves to well-constituted minds, to which I have studiously adhered, to the eschewing of mystic and enigmatic language. That the New Gellivare Company (Limited) possess in their mineral deposit, if worked, "un vrai embarras de richesse" is a theorem which can be satisfactorily demonstrated; and although hitherto, for reasons well known to me, the outcome of much magnificent assumption has been made to resemble the loud voice of a storm forgotten when Nature has recovered her equilibrium, it is to be hoped imbued with the special characteristics of the epoch, so practical and utilitarian in their tendency, the leading parties who have invested so large a capital in the New Gellivare Company will now be convinced of the impracticability financially of any company constructing and working a surface railway from Gellivare to the seaboard to give other than the most disastrous results. It is well known the Gellivare Company sent out an eminent engineer from London, having for object the construction of a surface railway, which they abandoned—such a system being utopistic in Lapland, the land of snow, traversed only by the web-footed reindeer, with which Nature has endowed this animal to prevent sinking into deep snow, by which means the Gellivare ore has been sparsely conveyed. Every effort has been strained in various countries to form a company, but fruitless. The tendency of the mind of the pedagogue is to reject anything not found in his books, come from what source it may, oblivious of the axiom that no amount of education will elicit originality of thought or mental insight. How full is engineering and mechanics of this truth. Nature does her work in strange unfathomable ways, and the mysteries of the Unknown are spelt out by those only to whom it has been given to do such work. The fact is all but incredible to think of how much has been done, and continues to be done, by thoughtful men to change the very face of the world, doing what at the moment seems utterly profitless. The system I propose is no novelty, consisting of an elevated trajectory or viaduct, with a series of undulating planes, ellipses, or epycycloids, by force of gravity and automatic mechanical power attaining a very high velocity, with absolute immunity from leaving the track, in either case impossible under the existing system. What higher evidence can I adduce in favour of such than that of the late Nicholas Wood, Robert Stephenson, an extremely favourable British Government report, without recourse to a prolix reference to numerous other ancient and modern philosophers, physcists, mathematicians, engineers, &c. But, apart from this system, access can be gained to the seaboard by a comparatively commonplace railway system. Subject to the New Gellivare Company, in surplusage of the concession proffered me of free land and wood for the construction of the line of 150 miles, allowing timber to be felled against payment of an equitable redevance or royalty by the railway company, and conveyed to the seaboard for export, I am assured sufficient capital to construct the whole line.

Looking at the immense development of the Spanish ore trade, and the low sea transport of the Gellivare output, I am sanguine of an era of prosperity dawning upon a district in which I have for many years taken a deep interest. The important work, "Sveriges Geologiska Undersökning," shows the immense and indisputable superiority of Swedish Lapland iron ore over Spanish for conversion of the highest class steel.

Dr. Siemens, representing the steelmakers at the meeting of the Iron and Steel Institute at Liverpool, said—"Steel of a high quality was almost indestructible—it would bend like leather, it would extend, and not break; but if the high pedestal of perfection were left they got a very treacherous material." Dr. Percy, in his "Textbook on Metallurgy," says—"Magnetic oxide of iron is that from which the finest qualities of steel are produced, and is found abundantly at Gellivare, in Lapland." Mr. F. G. Field stated—"We have no proof that steel rails in getting cheaper have retained their quality. It is well known the number of steel rails that have broken in Canada, as against iron rails that have stood in Sweden (say) 10 or 15 years, with scarcely a single case of fracture, conditions of climate being about the same for both countries. From an engineering point of view the safety as well as the durability of the rails has to be considered." I deferentially submit a monopoly of the supply of steel rails, armour plating, ship and boiler plates, and innumerable other requirements is reserved for the effective and energetic exploitation of the immense magnetic iron deposit in Lapland. It remains, therefore, with the New Gellivare Company to throw their powerful ægis over my efforts, and debar all agiotage or scheming in a chimerical projected Arctic railway for their iron ore transport, which it can be demonstrated can never pay.

Not presuming to exceed the limits indulgently placed at my disposal in the columns of your invaluable guardian of mining interests I am necessarily compelled to eschew any approach to prolixity. How truly did Sir John Herschell exclaim—"How much is escaping us. How unworthy it is of those calling themselves philosophers and men of science to allow these grand phenomena of Nature, these majestic manifestations of the power and glory of God, to glide by unnoticed, and drop out of memory beyond reach of recovery." Von Humboldt truly said—"The enquirer into Nature finds himsely penetrated by a profound consciousness that the facts hitherto yielded by direct observation and by the careful analysis of phenomena are far from having exhausted the number of impelling, producing, and formative forces." W. J. THOMPSON.

Little Tower-street, Sept. 13.

ROYAL CORNWALL POLYTECHNIC SOCIETY.

SIR,—Although I do not write officially there is a suggestion in the letter of Messrs. Normandy, Stillwell, and Company that their exhibits at the Royal Cornwall Polytechnic Society were in some way neglected by the judges, that seems to require correction. Messrs. Normandy, Stilwell, and Company had a trial of their machinery on Monday at the docks (where steam-power was provided by the Society in the usual way), which was attended by the Judges; and as to the result of that trial the judges did not feel called upon to make any award. Machinery requiring steam-power is always exhibited at the docks; but it is open to any exhibitor who desires to remove it—if its character permits—after trial to the Hall; and this Messrs. Normandy, Stilwell, and Company could have done with their borer if they had chosen. Further, had Messrs. Normandy, Stilwell, and Company been familiar with the county and the Society they would have known that the mechanical department of the Polytechnic has several sections, that each is represented in the list of judges, and that skilled workmanship (as in the wigs) has always been one of the things encouraged. Messrs. Normandy, Stilwell, and Company may object to the decision of the judges, but they have no cause to say that they were overlooked. R. N. WORTH.

Falmouth, Sept. 12.

ROYAL CORNWALL POLYTECHNIC—JUDGES' AWARDS IN MECHANICAL DEPARTMENT

SIR,—In last week's *Mining Journal* I notice a letter from Messrs. Normandy, Stilwell, and Company, complaining of the awards of the judges in the "mechanical department."

There is, I think, a certain amount of bitterness throughout the whole letter, which might have been well dispensed with, and which is not at all likely to improve the position of the writers in the minds of those who have any knowledge of the judges in this department. If exhibitors wish to be favourably considered they must produce something worthy of notice. During many years that I have assisted in considering the claims of competitors I have always found that the judges were unanimous in recognising any case of real merit; and no better proof of this can be found than in the success of the man-engine, the miners' surveying instruments, the improved tin-dressing machinery, the rock-borer, and many other valuable appliances that have done much for the advancement of mining especially.

On the other hand, they have in past years done a great public service in discountenancing worthless exhibits. The cost the exhibitor has been at in coming to show his goods they have nothing to do with, but to merely award according to merit. I well recollect some years since an engineer exhibiting an appliance which certainly was new at that time, and which was thought by some to be desirable to be introduced into mining. But on looking at the mo del it was plain to all practical men that there would be a very serious hitch in the working. It was not awarded a medal. The inventor (a man of standing) was in high dudgeon, vowed he would never exhibit at the Polytechnic again, and kept his word. But what about the machine? He was so convinced of its value that he had it put up on a mine in the eastern part of Cornwall at considerable expense. Its failure was most complete, and he was requested to remove it as quickly as possible to make way for appliances of known value.

With respect to the machinery exhibited at the Polytechnic this year, I am sorry to acknowledge that it was not only small in quantity, but also deficient in other respects. In fact there was nothing exhibited that the judges thought worthy of the first silver medal. The air-compressor did not commend itself to them as being at all superior, if as good, to those at present in use in Cornwall; and they failed also in seeing any special merit in the stone crusher.

Speaking generally, and without reference to particular cases, there is a class of men coming boldly to the front with alterations on other people's inventions barely sufficient to evade patent rights, the said alterations in many cases not being improvements, but being rather retrograde steps. Next year will be the jubilee of the society, and I hope that special efforts will be made to bring forward new and high-class inventions. There can be no doubt but that there is a wide field still open in this direction, and I am quite certain that the society would do its duty as it has done hitherto.

Falmouth, Sept. 12. ONE OF THE JUDGES.

REVIVAL OF STRONG'S WATER GAS.

SIR,—So much was published in the *Mining Journal* some few years since concerning the American invention—Strong's Water Gas—and so little has been done toward demonstrating its practical utility that I was really surprised, considering the reputation the name of Dwight enjoys in New York, to see that anyone claiming that name, although the Christian names may not be identical, advocating the Strong system as an economic one for the generation of gas. It is true that Dr. H. Wurtz published some long articles in the New York Journal of Gas Lighting, but they certainly did not show that anything practical had been done, however much may have been promised. As to what may have been written by Dr. Moore of the United States—rather a wide address—and by Dr. Bunte, I know nothing; at the moment I do not recollect their names nor the schools they belong to; but the remarks of Eggerz, Wagner, and Naumann were equally applicable to all systems of carburating steam—if such an objectionable term be admissible—and ought not to be appropriated exclusively by Strong. Strong, Isham Baggs, and innumerable others have laboured in the same direction, but not one has been able to pass successfully the ordeal of practical application, nor to return profits upon the manufacture.

Mr. Dwight seems to assume that the maximum useful effect of coal employed for the production of heat is to be obtained by first extracting the gas and then using that gas for the attainment of the object in view. The assumption scarcely needs consideration, as it will be admitted that of two methods equally well applied the direct must have the advantage over the indirect. Theoretically perfection will be attained when precisely the correct quantity of air is admitted to ensure complete combustion of the fuel in the furnace—and whether it be a blast furnace or a boiler furnace the same principle holds good. I believe that in the Prideaux furnace considerably more than 36 per cent. of the heating power of the coal was utilised. In using gas the heat generated in the process of manufacture would in most cases be lost; and the foul unwholesome odour always observable may, moreover, be accepted as a sure indication that the combustion is imperfect and that waste is going on. Mr. Dwight should at least state what has been done with the Strong system in America, and why after ample trial it has been practically abandoned in that country.—*Sept.* 15. COMBUSTION.

GOLD IN WALES—No. XXXII.

SIR,—In speaking and writing of Merionethshire native gold, I have invariably characterised it as electrum—that is, gold in a natural state containing 15 to 20 per cent. of silver, and worth about 70s. the oz. The gold got from the Clogau Mine has hitherto proved an exception to the rule, and contains about 10 per cent. only of silver, some of which has fetched as much as 82s. the oz. I have elsewhere noted also that the Mawddach stream-gold is 2 to 3 carats finer than that found in the adjacent rocks whence it must have originated! This seems strange, but so it is, that is according to the bought notes of the bullion dealers.

I have strong reasons for believing that much of the British gold coinage is considerably indebted to Merionethshire and Cardiganshire for the precious metal of which it is made. Sir Hugh Middleton knew very well what he was about in Cardiganshire, and it is morally certain that the silver *per se* of his getting from the lead ores there found helped the New River to London only part of the way. And that ingenious Aberystwith mint-master, Thomas Bushell, Esquire, was all there and something besides silver when he was enabled to render such princely service to his master, the first King Charles! *Apropos* of this, the following extract from Plot's Natural History of Oxfordshire, published 1705, under the head of "Antiquities" (p. 315) will be found interesting. Of the above-named two worthies I shall have more to say anon. Writing of the gold coins of the realm, Plot says:—

"These British pieces are all hollowed to a concave on one side and a convex on the other (a concomitant of most if not all British coin), and they are all gold or at least electrum, as most of the British money we now find is, which is a sort of metal compounded of gold and silver, and this done either by nature or proportioned by the artist. That there is such a metal as natural electrum we have not only the testimony of Pliny (1), who says—'it is found commonly in trenches and pits.' But of Sarvius (2) and St. Isidore, Bishop of Sevil, the latter whereof asserts that the natural electrum is of great value. *Quod natur aliter inveniter in pretio habetur* are his very words, for that is more pure than any other metal, and that if poison be put into a vessel made of it it makes a hissing sparking noise (as Pliny also witnesses) and casts itself into semi-circles, resembling rainbows as well in colours as figure (3). To which add the testimony of Peter Martyr, a person of unquestionable credit and veracity, who himself saw a great piece of pure natural electrum so heavy that he was unable to move it one way or other, much less to lift it with both hands from the ground. They affirmed (says he) that it weighed above 300 pounds at 8 ounces to the pound, and that it was found in the house of a certain prince and left him by his ancestors. And, albeit that in the days of the inhabitants then living it was nowhere digged, yet they knew where the mine of it was, but were very unwilling to discover the place; yet at length they did, it being ruinated and stopped with stones and rubbish, being much easier to dig than iron-mine, and might be restored again if miners and others skilful therein were appointed to work it (4). Some such natural electrum seems also to be hinted in the Civil Law, and to have been mixed with silver. Neratus reporting that Proculus gave sentence that it was no matter in a legacy of electrine vessels how much silver or electrum was in them, but whether the silver or electrum exceeded, which might easily be perceived by ocular inspection; or, if so equally mixed that it could not be done, that then recourse was to be had to the estimate of the testator, amongst which sort of vessels he usually accounted them (5). Whence it is easy to collect that the electrum here spoken of can be no artificial mixture of silver and gold again mixed with silver, but a natural metal before its mixture with silver. Moreover, that there is also an artificial electrum is as evident from the institutes of the Emperor Justinian (6) and Q. Floe. Tertullian (7), made by intermingling gold and silver, according to the natural mixture, which according to Servius and St. Isidore was of gold in a triple, but according to Pliny and Monsieur Savot (8) in a quadruple proportion to one of silver—namely, 19 carats of gold and 4 carats of silver. Or d'Allemaigne holds the same proportion (see Cotgrave's French Dictionary in verb Or.), which, as the same Savot testifies, were the proportions observed by the Emperor Alexander and Lewis XII. of France, by an ordinance made at Blois, of Nov. 10, 1506, for the French gold, which very proportions I should be willing to think our British coins to have; only I guess the Britans had and made use of as little art as might be, wherefore I am inclined to believe them rather native electrum, dug and coined thus according as they found it, either richer or poorer, for I have seen some pieces of this sort of money much richer in gold than some other are. That gold and silver mines were worked here in those ancienter days is plain out of Strabo, as also from Tacitus; Fert Britannia (says he) *aurum and argentum, and alia metalla, pretium victoriæ* (9). And Prince Galgacus, chief captain of the Britains, now beat back as far as Mount Grampius in Scotland, in his speech (before the fight with the proprætor Agricola) exciting them to indignation against the Romans, amongst other things tells them that these were the men that had taken from them their fertile soil, their mines, and trading towns:—*Neque enim Arva nobis, aut metalla, aut portus sunt, quibus exercendis reservamur* (10). Now all gold whatever containing some silver more or less, and the Britains being not able to refine it then as in after ages, were necessitated to coin electrum after this manner. That they had and coined silver in there early times is also plain from Mr. Camden, Mr. Speed, &c., who have given us draughts of silver coins of Cunobelin, Venutius, King of the Brigantes, and Caractacus, King of the Silures, both which make not a little for the reputation of my conjecture, § 62 and 63 of the sixth chapter of this essay, the mines there mentioned, in all probability, being some of those spoken of by Tacitus, and perhaps first belonging to the ab-original Britans, and after to the Romans. To this, if it be objected, out of Cæsar's commentaries that the Britans then used only copper (and that imported), and iron rings instead of money; and that this gold might either be also imported, or the mines discovered after the conquests of the Romans. It may rationally be answered that Cæsar's account of the state of Britan is as imperfect as his Victories or Travels in it were. For we find in Mr. Speed a gold coin of King Cassivellaun, who was king here in Britan at Cæsar's arrival, besides the Romans came there not to enrich, but to spoil Britan. How unlikely it is, therefore, they should supply them with gold, or find their mines so early, let the reader judge. * * * After whose departure (Cæsar's) the Britans, say Tacitus, enjoyed a long peace, lying forgotten by the Romans all the days of Augustus, Tiberius, and Caligula; so unlikely were the Romans to held Cassivellaun or Canobelin to this gold or electrum; nor, indeed, is it probable they would do it after in the time of Claudius, when they had footing here; not only for that money and riches are the incentives to rebellion and the very sinews of war, but because they had thought it fit, either then or before, we should certainly have heard on't in some of their writings." [434 h 25 B. M.]

1.—Nat. Hist., Lib. 33, cap. 4.
2.—Mam. Servii Honorat. Comment in Pub. Virgilii, Æneid, lib. 8, ad. v. 204.
3.—Isidori Epist. Hispalensis, Originum lib. 16, cap. 23.
4.—Petri Martyris Angierii de Orbe Novo, Decad. 1, cap. 4.
5.—De auro Argento, &c., Leg. pedículis, § Neratius.
6.—Institut de Rerum divisione, § Si duorum.
7.—Q septimii Florent. Tertulliani Lib. advers. Hermog. cap. 25, and adversus praxean cap. 27.
8.—Lovis Savot de la Matiere des Medalles antiques, 2 pt., chapitre 9.
9.—Tacitus in vite Julii Agricolæ, cap. 12. 10.—Ibid cap. 31.
11.—Julii Cæsar. Comment de Bello Yallico, lib. 5.

Ruding, in his Annals of Coinage (vol. I., p. 60) writes—"Athelstan imposed upon the conquered Prince of Wales, amongst other things, the annual payment of 200 lbs. of gold and 300 lbs. of silver." It is difficult to understand the use of such an imposition, unless Athelstan was pretty well assured that the gold and silver could be had somehow, and from the Principality itself.

Leake, in his Nummi Britannica Historia (p. 99), writes—"The English gold coins I have met with of this king (Charles I) are but few, and no wonder there is so little gold money of this king (although he is said to have coined 1,500,000*l.*), for during the distractions of his reign people's properties were so uncertain that they were glad to invest it in this metal for security, so that people gave 6 or 7 per cent. to exchange silver for gold, and being thus engrossed, chiefly into private hands, was either conveyed beyond sea or committed to its mother earth for security, where undoubtedly a great part remains to this day." [603 f. 15 B.M.] I have no doubt that this is so, and I shall have something curious to write about it by-and-bye. The exigencies of the king at times were extreme, and his piety being scarcely skin deep, greed perspired easily through it: his trickster counsellors were more than a match for him, and it is not so wonderful that eventually he lost his head—"more sinned against (perhaps) than sinning." T. A. READWIN, F.G.S.

London, Aug. 26.

VENTILATION OF MINES.

SIR,—It is lamentable to know that so many valuable lives have been lost for want of efficient ventilation, and that gentlemen who have realised immense fortunes from the sinews of the poor hard-worked people who go down into the dark and so (vitally) dangerous coal and other mines or pits, still hesitate to adopt any scheme or invention which, by its adoption, might effectually preclude a recurrence of such disasters as those at the Seaham and Risca collieries of late, and innumerable others, some of as great and others of less magnitude, which are kept as concealed as it is possible from the public It is painful to hear that great projects have been submitted to some very extensive colliery proprietors, and they either pooh-pooh it or say at once that it is impracticable. I believed it is chiefly the expense that is considered too great. Surely then the Government will after the long investigation of the Royal Commission thereon, see to this important subject, and compel proprietors of mines to adopt such efficient means as have been, and still are, extant. Subjoined is a letter just received from Mr. John Onions describing his patent—which appears to me to be most efficiently adapted to eradicate all further danger from the explosion of gas or other noxious vapour so manifest in coal and other mines—which, in my opinion, deserves serious attention, especially as the coroner's jury on the Seaham disaster have found after months' investigation that neither the seat nor the cause of the explosion has been shown. Failing, then, to ascertain those facts of itself clearly proves that the enemy (gas) lurks in secret places, and should be fetched out. In describing the mode by which he accomplishes this object he says:—

I fix a large cistern or tank near the bottom of the upcast shaft, with branch pipes leading from the various workings, or any place in the pit where foul air, gas, or any noxious vapours exist or are likely to accumulate, having a kind of hopper mouth at the end of each pipe for the more easily receiving of the vitiated air, gas, &c., into the pipes, tubes, or troughs so connected with the tank, as stated above, to which I would attach a large air-pump (to be worked by a steam-engine), with inlet and outlet valves of such dimensions as to relieve the engine of a vast amount of pressure, and also produce a vacuum in the tank sufficient to exhaust any amount of air, gas, &c., &c., that is likely to engender, and so, of course, cause a fair flow of fresh air through the pit, the exhausted air, gas, &c, to discharge itself through the outlet valves of the pump into or through a large tube into the bottom of the upcast shaft.—N.B. By the means of the air-pump, with branches and pipes therefrom, you cause the air, gas, &c., to rush into the said pipes immediate from the spot or place where it exists, or may be likely to exist, and so pass into the cistern or tank, where a complete vacuum is formed by the air-pump's exhausted power, which cannot fail to cause a current of air to exist throughout the workings of any pit, of course, where there is a downcast or driving shaft, which will naturally supply any vacancy so caused by mechanical agency, while on the other hand a fan possesses no drawing action or suction beyond its immediate vicinity, which is chiefly supplied from the down or driving shaft, the distance between the two being short and without obstruction, while the air in the interior of the works remains in a quiescent state for want of extraction, by means of an air-pump (as described above), with pipes leading direct from the very required spot where danger may exist in the cistern, tank, or receiver, from whence it is drawn by the large pump, and passed into the bottom of the upcast shaft, which is of course adapted for that purpose. I contend that by adopting the above partially described plan as suggested all dangers from explosions will be averted.—JOHN ONIONS.

Colliery engineers will at once judge of the novelty and utility of Mr. Onions' arrangement, and as it is to their own interest and credit that the collieries with which they are connected should be as free from accidents as possible I am sure they will be ready to give it their best consideration.—*Sept.* 13. SAFETY.

TAVISTOCK GREAT CONSOLS.

SIR,—The animus of the letter signed "T. G." in the Journal of last Saturday, and which—at any rate—is dated from Tavistock, is more apparent than the sincerity of the writer's desire for information regarding the above mine. Considering that the mine is situated about a mile from Tavistock, the action of "T. G." in sending his question concerning it to London is about as sensible as if a resident at Tyneside were to send to Aberdeen to enquire the price of coals at Newcastle! Moreover, if "T. G.'s" ignorance were so wholly unfeigned as to account in some degree for the otherwise strange freak of his addressing his enquiry respecting the operations which are being carried on within little more than a mile from his own door to the Editor of the *Mining Journal*, residing upwards of 200 miles off, it is altogether unaccountable that he should at the same time be in a position to declare respecting the said operations that they have been for some time past almost at surface.

"T. G." writes as follows:—"Please allow me to ask through the *Mining Journal* if it is a fact that the captain of this mine has suspended opening on the reported great discovery of tin, and put the men to search for better ventilation. They have been for some time past almost at surface. Is it a fact they fear to move in the late discovery?" Now, in the very same number of the Journal (that of the 10th inst.) in which "T. G.'s" letter appeared will be found the captain's report from the mine, dated September 7 (the very same date as "T. G.'s" letter?), in which he states—"I have set the men to put up a rise in the back of Anderton adit level in order to communicate with Rix Hill old adit level; and when this is accomplished it will give us good ventilation to work the new tin lode more extensively." So much for "T. G.'s" baseless insinuation of a fear to move in the late discovery. Then as regards "T. G's" ridiculous question as to whether the men had been put to search for better ventilation. As if ventilation were a sort of thing with which miners played at hide" and seek"!

Captain Josiah Thomas, in his valuable report of the 23rd June last upon this property, stated as follows:—"In about 8 fathoms further driving this (Anderton) level will have been driven as far west as the adit east from Rix Hill, which is about 6 fms. above the adit from the Anderton side. When these are communicated to each other good ventilation will be secured, and the rich lode above reported on can be further explored and laid open for stoping above the adit level." What I wish to point out is that the work which was indicated by Captain Josiah Thomas on 23rd June last, as so desirable to be done in this mine in order to secure ventilation and further open up the rich tin lode which he so favourably reported upon has been steadily proceeded with ever since that date; and now that the necessary point has been reached at which the rise referred to can be made, Captain Treganowan has at once set his men (not to search for better ventilation, but) to make the desired communications between the two levels, and which will secure perfect ventilation above the adit levels throughout the mine. Not only this but (as Captain Josiah Thomas further states in his report) "several tons of tin can be raised immediately on the above-named communication being effected."

I think this simple statement of facts very completely disposes of the depreciatory remarks and enquiries of "T. G." regarding this property, and shows also the very satisfactory manner in which it is being steadily opened up. I would add there can be little doubt that this important mine will prove still richer as depth is gained; and, of course, efficient pumping machinery will have to be erected before it can be opened up below the adit levels. But the foregoing extract from the report of Capt. Josiah Thomas (than whom there is admittedly no higher authority on tin mining) shows clearly that large quantities of tin can be brought away from above the adit levels as soon as ever the communication now being made is effected, and this will be accomplished in a few weeks time. Q. E. D.

Sept. 14.

TAVISTOCK GREAT CONSOLS.

SIR,—Having seen several letters in the Journal lately relating to the above mines, I shall be much obliged if you will allow me space in your next impression to make a few remarks about the property. I paid a visit to the locality about a fortnight since, and went over the mine with the manager, and was much struck with the splendid appearance of the stuff from the new lode recently discovered west of the cross-course. I saw samples taken promiscuously from a large heap of work which is now at the surface, produce from 25 to 40 per cent. of tin, and I have now by me some specimens from the same lode which would assay quite as rich. There is no doubt that this lode, which was never opened until a month or two ago, is likely to prove very productive, provided it is worked in an energetic manner.

In former workings of the Anderton Mine more than 100,000*l.* worth of tin has been raised, and had the old company but persevered in driving the adit a few fathoms further than they did they would have discovered the new lode, and in all probability the mine would never have been stopped, for had the lode continued as good as it shows where it is now opened on (and it has every appearance of so doing) it would have produced sufficient mineral to have kept the mine going, notwithstanding the low prices which have ruled for metals for so many years past. Wherever the lodes in Anderton have been worked they have produced good tin, but a comparatively small area only of the sett has been explored. I believe this mine will be one of the best in the county if thoroughly developed; and looking at the reports of such practical miners as Captains Josiah and Charles Thomas one can form only one opinion, and that is that whatever company takes the mines in hand to well work them will get a rich reward. The depth where the new lode is being opened on is 30 fms., so that it is not almost close to the surface, as one of your correspondents, "J. G.," says. I cannot see what connection his remarks about the mode of cleaning tin eight years ago has with the present manner of carrying out the operations underground. The manager is no doubt quite capable of arranging the work, and will be equally competent to superintend the preparation of the ore for market when the time comes.—*Exeter, Sept.* 13. J. C.

TAVISTOCK GREAT CONSOLS.

SIR,—Falshood insinuated, in the hands of experts, does much injury, and is not only cowardly, but can be used with little risk of the consequences falling on the heads of its facile subjects. This seems to be understood and acted upon by "T. G.," in last week's Journal. In its eight or ten lines it contains half as many misrepresentations, but its cowardly wickedness is as obvious as its inaccuracy. The initials it bears do not conceal the hand that penned it, and probably had the parties interested in this fine property given away in certain channels a number of shares for nothing you would have been spared the infliction of disappointed greed in effusions like those of "T. G." Your readers may rest assured that what has been reported of this property by the very highest mining authorities in the two counties is capable of complete verification, and its administration is in competent hands, who know well how to get the best results with least cost—a mode of managing mines which is not improved upon by a fine poetic frenzy or insinuation. GNOSTIC.

Sept. 12.

THE LATE MINING MANIA.

SIR,—The columns of the Mining and every other Journal have lately teemed with advertisements of mining speculations, as well as the consequences resulting from the excitement of the time. History repeats itself in cycles. I well remember the times your old correspondent, Mr. Symons, of Truro, refers to in one of his letters. The glowing prospectuses issued by promoters by no means represent the opinions of practical miners, who generally give candid opinions; on these the promoters, schemers, *et hic genus omne*, found highly exaggerated statements. These certainly do not detract from the real merits of the properties if they were really worked, and the nominal capital expended

Mining proper does not consist of a board of directors who know nothing of and care less how the mines are being wrought so long as they receive fees for attendance, sign cheques, find faults, and issue "reports." Mining under any circumstances is, to a certain degree, a hazardous speculation, even when the "board" consists of gentlemen who, no doubt, have a right to the titles and position stated in the prospectuses. How many of these are assumed and deceptive? Aye, there's the rub. "A galled jade will wince" is a very old proverb. It is still applicable—so is *caveat emptor*. If people will be so foolish as to take pills from a quack no wonder capitalists and silly folk are deceived by advertising pretenders.

The writer has been associated with British mining enterprises for more than 50 years, and invariably acts upon another old maxim—"Tell me who you are with, and I will tell you what you are."

A SUCCESSFUL MINER.

MINING INVESTMENT, AND MINING SPECULATION.

SIR,—My attention has been called to a letter, by "Caistor," in the Journal of Sept. 2, in which the writer presses rather hardly on the management of certain mines in North Cardiganshire, in which I am largely interested. I took the advantage of a tourist ticket, and saw for myself that the representations made by the managers had not in any way been over-estimated. No returns, so elaborately dwelt on, cannot and should not be deemed no success, seeing that the machinery now in active preparation is not yet got ready for action; in my opinion a wise act, as I have known many instances where provision has been made for dressing ore before there was ore to dress. It would certainly be unwise to eat the calf before it is veal. I took one of the most practical and experienced miners known as my friend. He went underground, and made a thorough examination of the properties, and advises me the produce at the surface (of which the abundance is self-convincing to all but those who are wilfully blind) is the *bona fide* yield of the lodes; that the agents so grossly maligned are fully justified in their statements, and folk who think or write to the contrary had better sell their interests, or read and study the 22nd verse of the 27th chapter of Proverbs.

CAISTOR OIL.

PUBLIC COMPANIES, AND ARTICLES OF ASSOCIATION.

SIR,—The letter from "A Shareholder" in the Indian Kingston and Sandhurst Gold Mining Company in last week's Journal almost leads one to suppose that Mr. Reynolds is not the only promoter who frames Articles of Association, which if submitted to a Chancery judge would be pronounced "a fraud which could bind nobody;" I am inclined, however, to think that "A Shareholder" has misread the articles in question, for I cannot think that any solicitor or barrister would have passed such a clause as that mentioned. The utmost that the most furious old Tory has ever asked for is that the rights of property should be respected, so that the holder of one hundred shares should have twenty times the voting power of the holder of five shares; but the Whig and Radical theory is that power and property should be separated, so that the less a man has at stake the greater shall be his power to waste the property of his neighbours. To secure this the original Companies' Act—that of 1862—has an article in its first schedule, clause 44, which reads—"Every member shall have one vote for every share up to ten; he shall have an additional vote for every five shares beyond the first ten shares up to one hundred, and an additional vote for every ten shares beyond the first hundred shares." As this Act was passed by a Liberal Government the partial ignoring of the rights of property was authorised, and it cannot be supposed that the present Government would permit such a total ignoring of the right of persons as is indicated by "A Shareholder's" letter. If, then, such a clause has been introduced the Court of Chancery should be at once applied to, and if the Court be powerless agitation should be at once commenced to secure an alteration of the law.

But that "A Shareholder" has indeed misread the Articles of Association seems obvious, for even directors, although as a rule they do not display so much intelligence and business capacity as, in the interest of those who pay the money instead of taking the fees, might be desirable, are seldom so obtuse as to expend their hard-earned (?) pennies upon proxy stamps to obtain proxies which give no vote. If the Indian Kingston shareholders (assuming that any who have paid for their shares after *bona fide* application and allotment really exist) are required to pay 1000*l.* per annum to such gentlemen they are indeed entitled to a more than usual share of condolence or of contempt, for it is difficult to know in what category to place them; but they may be told that "A Shareholder" would show no more wisdom than his directors if he did not know that under clause 32 of the Companies Act, 1862, he can demand a copy of the names and addresses of every shareholder in any company whatever upon paying "sixpence for every hundred words required to be copied," the penalty being 2*l.* for refusal and 2*l.* per day while the refusal continues, and every director and manager incurs the like penalty. With a knowledge of these facts the alleged proceedings of the promoters and the observations of "A Shareholder" are alike enveloped in—

Sept. 13. MYSTERY.

THE COST-BOOK AND LIMITED LIABILITY.

SIR,—With reference to the question of the comparative merits of Limited Liability and the Cost-book Systems can anyone state positively whether there is any limit to the liability of a holder of shares in a mine worked on the Cost-book System. Shares in these mines are frequently very tempting, but one sometimes hears fearful tales of the horrors that have overtaken shareholders in mines of this class proving insolvent. Is a shareholder liable for the full amount of the debt, or is it only to the extent of the interest he holds in the mine? Is he liable after selling his shares, and if so for what period?

The no credit plan apparently solves all difficulties, but how is a private shareholder to feel positively assured that this plan is actually carried out? Lastly: Is there any means by which a private shareholder, knowing nothing of the committee of management, can absolutely assure himself that the finances of a mine are all square.

J. A. H.

GOOD NEWS FOR CORNWALL AND OTHER MINING DISTRICTS.

SIR,—I have read of late with great interest of the different improvements in mining operations separating metals by smelting, and by different chemical means in the *Mining Journal*, especially one which I consider most important and valuable for those engaged in mining, since its object is to separate metals, chiefly precious metals, from their silicates and aluminates practically on a large scale, and with profit.

That almost all metals, chiefly gold, exists so abundantly in the crust of the earth, chemically combined with silica and alumina, is now in spite of the long and obstinate denial of many great chemist and geologist generally acknowledged by practical and scientific miners and metal smelters, and of late it has been without doubt ascertained and proved that the tailings and scories that are so largely produced at gold, silver, copper, lead, zinc, and tin mines by dressing the ores and lying waste for years amount to millions of tons in the mining districts, the metals, chiefly precious metals, in the scories being chemically combined with silica and alumina can be made use of with great profit in extracting the metals by a new process, which will soon be known to the public practically, and on a large scale. This important and valuable discovery will be a great encouragement and benefit to all engaged in mining operations.

London, Sept. 15. A MINER'S FRIEND.

DISCOVERIES OF OLD AND NEW COURSES OF ORE—"HISTORY REPEATS ITSELF."

SIR,—That this saying is very old we all know, and I think we may conclude it is perfectly true. Let us look at the following as instances. Extract from a M.S. history of the mines of Cardiganshire, page 40:—"Bwlch, Esgair-hir, and Esgair-fraith: These celebrated mines were discovered in 1690 on the estate of Gogerddan, belonging to Sir Carbery Pryse. The ore was so near the surface that the moss and grass scarcely covered it; and so great a quantity of very rich quality continued to be raised that they were not exceeded for value by any in the kingdom, and obtained thereby the appellation of the Welsh Potosi." Mr. Waller, a scientific and practical man, who was then manager of these mines, demonstrated that he could give 70,500*l.* per annum, as by paper printed in the year 1693. (Then follows the calculation, &c.)

Now, let us look at Nant-y-Cria from the ground underneath the sod and within a foot to surface. See the great discovery made. Let us again look at Wheal George, in Carnarvonshire, and see the magnitude of that magnificent discovery; and all persons connected with mines at home must be cheered at what now lies in store for us with energy and those matters placed before us for developing mines on a large scale, from which we may reasonably expect three times the profit from discoveries than was made heretofore.

Goginan, Aberystwith, Sept. 14. ABSALOM FRANCIS.

CARADONS AND POLROSE.

SIR,—In my letter in last week's Journal I called attention to the Caradons—West and New West—stating a few facts which may have been interesting to readers. There has been a good deal of scepticism about these mines, but it is best to let bygones be bygones, and let the mines speak for themselves in the future; there is probably a greater diversity of opinion upon mining adventures than any other enterprises, hence the great fluctuations in values which frequently manifest themselves in the share market.

My remarks this week have reference to the Polrose Mine, which is situated in one of the richest districts in Cornwall, has been worked for a considerable time, has produced a large sum of money from the sale of tin, and is thoroughly equipped with 60 heads of stamps, and all the paraphernalia necessary for the preparation of tin for the market. I was struck with the amount of money which had been spent in all this machinery and the capital condition of all the woodwork. The shares seem low when a fair estimate is made of the property upon the ground, and the work done on and in the mine, but this is to be accounted for by the disappointment which has been felt by some stockholders who have lost patience (an attribute of character indispensable in mining), and sold out their stock because the Polrose lode remains still a matter of prospective futurity. The cross-cut which was put out at the 90 for 60 fms. has passed the assumed line of this lode without cutting it, hence the disappointment, but the opinion still is held by those competent to judge that the lode is still ahead of the cross-cut, but with a greater heave than has been anticipated. Why, Sir, I understand that lodes have been heaved 75 fms., and been found and proved. Should a few fathoms in this case destroy confidence?

I found, however, upon arrival, that a beautiful lode 1 ft. wide had just been cut in the cross-cut, which at this writing no one seems able to pronounce upon, except that it is very rich in copper and some tin, and an expert familiar with the mine, I see in Messrs. Watson's report last week, pronounces it the best lode he ever saw in the mine. This may be the Polrose lode; it may be another as good. Those who have seen it say it possesses some of the Polrose lode characteristics. Time will show. Great interest centres at present at this point, as six men are opening upon it at last account. Now, in addition to this discovery, the 100 east in the Margaret lode, is producing saving work for tin, and improving in quality, to say nothing of two or three other points at depth on the same lode. There is 100 tons of stamp stuff laying at the mouth of the shaft awaiting the stamps when the direction sees fit to set them at work. There is a cross-cut driven south also in the 90, which has passed through several branches which shows mineralisation of the ground, and are probably feeders to the Margaret lode improving in depth.

Then another feature of interest is an old adit, which Capt. Bennett has cleared up 160 fms., and which any day may introduce him to the riches that induced our ancient predecessors to go to such an

expense. Tradition pictures visions of mules laden with the spoil, and facts lie upon the surface at the old burrows in the shape of stones containing the much coveted metal. The ground is cheap, for 5*l.* a fathom is about the average price. The workings are at 90 and 100 fms., so that the ore is found in depth. No money will be required for machinery; it is standing ready for use, all paid for, with ample engine-power, &c. The management is in the hands of the Messrs. Watson and their friends, which is a sufficient guarantee for the economical disbursement of the funds, and that no debt shall be allowed to accumulate, and the shares at present quotation place the mine at the modest figure of 5000*l.* I suppose the machinery would sell for 3000*l.* as it stands. It is for dealers to say if this adventure is worthy of their attention with the present discoveries and the prospective ores in the near future. A VISITOR TO CORNWALL.

Sept. 12.

FORTESCUE (STANNAGWYN) MINE COMPANY.

SIR,—I have been out of town for the last two weeks, and on my return I see a letter in the Journal of Sept. 3 from Messrs. Thompson in reference to my letter to you, which appeared on Aug. 20. In justice to myself I must state the following facts: The only communications I have ever sent to Messrs. Thompson have been five letters—(1) applying for prospectus, (2) applying for shares, (3) enclosed cheque, (4) for information, and (5) for information.

To the letters for information, though couched in proper and courteous terms, I have received no reply; and I knew of no other course but to ask through the columns of the Journal the same question I had so unavailing asked Messrs. Thompson.

Messrs. Thompson have now sent me (in common, I believe, with the other shareholders) a printed circular "giving a clear and concise statement of the doings, and the going to be done business, of the company." But this document was dated Aug. 24, 1881, and was not sent out until four or five days after my letter to the Journal had appeared. Therefore, their charge against me of making "a statement that is not true, in fact" is without foundation; their vague insinuations, also, about a shareholder who writes on post cards and letters unsealed are (if intended to apply to myself) both false and malicious. As regards the charge of attempting to injure my co-adventurers' property, although my interests are identical with theirs, I cannot see how my letter, merely asking for information, was calculated to injure our property, and I think such an inference absurd. If it be possible for a letter to injure a company, then I think the effusion of Messrs. Thompson, fraught as it is with false charges and base insinuations (necessitating their exposure), would certainly have that effect. EDWIN TRIMEN.

Portugal-street, Sept. 13.

THE GREAT DISCOVERY OF TIN IN BELL VEAN MINE.

SIR,—Quite a sensation has been caused in Gwennap by the discovery which has taken place in the above mine, and numbers of people are visiting Gobbin's shaft to inspect the beautiful specimens of tin ore that are being brought to the surface. The lodestuff is valued at 2 cwts. of black tin to the ton, and that at a depth of only 20 fms.; this is a very high percentage, but it is considered that as more depth is obtained the percentage of tin will be vastly increased, and the Bell Vean Mine will be added to the list of those historical mines that surround it on all sides, which have given this district the name of being the richest mineral ground in all Cornwall. The necessary dressing machinery is under order, and will be on the mine in the course of a few weeks. This discovery is another proof of the assertion so often made in this Journal that success is more likely to attend the working of new ground, especially in this district, than the resuscitation of deep watery mines, in which the expense is endless. CORNISHMAN.

LADY ASHBURTON MINE.

SIR,—I have been visiting this mine constantly for the last month, and more especially this last week, and I am pleased to state that a great discovery has been made. The lodestuff now being brought to surface is excellent, and according to assay is worth from 12 to 14 per cent. for copper, and upwards of 25 ozs. of silver to the ton. The lode is looking grand indeed, and no doubt ere long the shareholders will be greatly pleased by an announcement that the silver lode has been cut in or near the Doctor's shaft, and I am of opinion great results must follow. The captain is most energetic, and worthy of his position, and I am convinced he is a practical miner, and believe his prognostications are to be relied on, and we may expect the Lady Ashburton to rank as one of the leading mines in the east of Cornwall, in fact there is no reason why the Kit Hill, with its granite and clay-slate formation, traversed as they are so numerously with tin, copper, and silver lodes, intersected by many elvan dykes and cross-courses, should not become equally productive when the same stages of development have taken place as the rich mines in and about the Carn Brea Hill—Dolcoath, Cook's Kitchen, Tincroft, the Carn Breas, Bullers, and the Bassets, all of great notoriety for their great riches. I hope to continue my visits to this mine and others in the district, and will write again as the development of the Lady Ashburton progresses. SHAREHOLDER.

Callington, Sept. 15.

[ADVERTISEMENT.]

WHEAL JANE.

SIR,—I must once more beg your indulgence to insert the following. I did not intend to have again replied to anything Mr. H. G. Sharp might feel inclined to say, but seeing that in last week's Journal he has again degenerated from the question at issue to abuse—which I need not say tends to show the weakness of his arguments—I feel compelled to again occupy a small space in your columns. I, therefore, take Mr. H. G. Sharp's remarks as they appear, avoiding as much as possible what he too often indulges in. Allow me, therefore, to inform him I am well known in Truro and Redruth, as he so pointedly remarks, for three reasons. First, for never having been engaged in any dirty business transactions; secondly, never trumped up false reports and sent them out in circulars broadcast throughout the country in order to serve selfish ends; and, thirdly, never allowed myself to be allured into a net to do the dirty work of others, so that they might fill their pockets to the expense of others.

Mr. H. G. Sharp next proceeds to the Chiverton district, with almost a threat that my folly, as he is pleased to term my disinterested motives, will lead to the losing of my situations here. Let me tell him, however, the writer would rather sacrifice 50,000 situations than be in any way accessary to doubtful transactions which would be calculated to mislead the public. Previous to being connected with this district I was manager for a mining company 15 years. When I say company, there was a committee of management; thorough gentlemen, and I feel confident there was not one among them who descended to share jobbing. They paid me 600*l.* a year, and on my leaving they tendered me 100*l.* in cash, and 25*l.* worth of gold to get made into any form I chose, as a token of respect for my past services. Now, I never did, nor should I have, mentioned this had it not been for Mr. H. G. Sharp's baseless insinuations. Mr. H. G. Sharp solicits an interview with Wheal Jane shareholders; but if I may be allowed to form an opinion would it not be better for this liberal individual to realise the 200 to 400 per cent. profit first that was held out as an inducement to investors in his circulars. Then I have no doubt his so-called clients could meet him with a much better grace, and swallow his statements about others with greater relish.

It is all very fine for Mr. H. G. Sharp to send out his gratuitous advice to those who know nothing whatever about the properties he so strongly advocates. But who on earth but Mr. H. G. Sharp would be so liberal as to sell such valuable mine shares that in such a short time, as he states, would realise these immense profits. Is it that Mr. H. G. Sharp is of such a liberal turn of mind that he feels a deeper interest in the welfare of other people's pockets than he does in his own? Allow me, in conclusion, to inform Mr. H. G. Sharp that in all my business transactions with the firm in 85, Grace-church-street, I have always found them to be gentlemen of high standing and straightforward honest business habits. By-the-bye, I may be wrong in the firm Mr. H. G. Sharp alludes to, but I mean the firm who, if I am rightly informed, had a short time since a lump sum out of Mr. H. G. Sharp to make up a libel case.

I cannot close this letter without making one other remark, which I feel certain every mining man in the county will endorse, and that is—reports have been got up and, mines not only puffed hundreds per cent. beyond their real value, but many of them without the slightest chance of success. At last (and naturally enough too) the investor gets dissatisfied with his purchase, and what is the result? Why, all the blame is thrown by the puffer on the shoulders of the poor mine captain, who is under sufferance at 8*l.*, or at most 10*l.*; per month; and is nothing more than a target to be shot at. This, I maintain, prevents the *bona fide* investor from bringing capital into the county, and it is high time one and all should expose such proceedings; I, therefore, quite endorse the suggestion thrown out by the Editor of the *Mining Journal*, in last week's issue, that a duplicate report be sent by the agent direct to the Editor's office; this would not only avoid errors, but would prevent unscrupulous puffers from putting it in so-called ship-shape. RICHARD SOUTHEY.

West Chiverton Mine, Sept. 14.

THE PIONEER MINING COMPANY.

SIR,—Having availed myself of the invitation of the company to visit their mines I obtained the necessary order from the secretary before starting for my holiday tour in North Wales. A short railway journey of half an hour from Chester brought me to Holywell. I found the mines are about a mile from the town, and a comfortable walk along a good, but steep, road brought me up to the top of the mountain. The day was fine, and the keen pure bracing mountain air was thoroughly refreshing and invigorating. The atmosphere being clear charming and extensive views were obtained. On one side the estuary of the River Dee spread out below in a variegated and magnificent panorama of land and water dotted with busy hives of industry, which formed a fitting and sombre outline to a beautiful picture. On the other side were lovely and smiling valleys spreading far away in the distance, till fringed by the Snowdonian Mountain range, with the towering peak of the monarch of Welsh mountains standing out in bold relief against a clear sky. The scene was entrancing, and enjoyable beyond description. I had, however, more stubborn work before me than to go into poetic rhapsodies.

On arriving at the mines I was courteously shown over by the manager, and must confess was agreeably surprised with all I saw. Everything was going on actively and in a most business-like manner. There were engines in full work, besides whimseys and other mining appliances. One shaft they were clearing of water, which was expected to be done by the end of this week, when they would be enabled to get at the bottom levels, and soon begin raising ore. In another they hoped to get ore as soon as they had sunk deeper, and in a third they had just struck into a splendid mass of ore, which I was told would enable lead to be raised as fast as they could keep the winding apparatus going. The washing and preparing the ore for market was also actively going on. I was greatly pleased with all I saw, and am quite satisfied that we have a splendid property.

On returning to the hotel, with an appetite sharpened by the keen mountain air, I did full justice to an excellent dinner excellently served. Altogether I was thoroughly satisfied, enlightened, and charmed with my trip, and would recommend every shareholder to go and do likewise, and to examine and judge for himself. A SHAREHOLDER.

London, Sept. 15.

THE PIONEER MINING COMPANY.

SIR,—I have much pleasure in forwarding you the following copy of a telegram received late last evening from Holywell:—"Splendid lead at Bessie's shaft; lumps of solid galena, 5 cwts. each; particulars per to-night's post addressed to the office." The further particulars are contained in the report, a copy of which is forwarded to you, and will appear in the usual place among the British Mines, and by this you will observe that this important discovery is thus described—"Within the last few hours we have broken from the forebreast fully 2 tons of splendid lumps of galena, some of them upwards of 5 cwts. each, and the end now shows a splendid sight full of lumps of lead for 4 ft. in width, and leaving rich ore in roof and sole of level." CHARLES C. ADLEY, Managing Director.

Palmerston Buildings, Sept. 16.

ARSENIC—OKEL TOR AS AN ARSENIC PRODUCING MINE

SIR,—The Mineral Statistics for the year 1880, which were published in the last and the previous weeks' Journal, must have afforded much information to those interested in mining. Besides noticing tin, copper, lead, &c., several comparatively new products were referred to, and among them Arsenic, which a dozen years ago was comparatively considered useless, but which at the present time is commanding great attention. In perusing the list of mines we now see several utilising the arsenic and deriving great profits therefrom. Since such consumption for arsenic of late many mines have been able to realise profits by re-treating the old burrows at a small cost that in years gone past was unsaleable. Now, as the consumption threatens to overcome production, together with the stocks becoming exhausted, the price per ton must considerably advance, and to those mines that have rich arsenical lodes are the mines investors should direct their attention. Arsenic is entirely obtained from Devonshire and Cornwall. The produce for the year 1880 amounted to 5738 tons, and realised 43,498*l.*, equal to 7*l.* 12s. per ton, this being derived from 16 mines only, Devon Consols contributing the highest—3148 tons, which realised 26,283*l.*, equal to 8*l.* 6s. per ton. Thus it will be seen more than one-half of the entire output was obtained from this one mine (undoubtedly from the stocks). The next on the list is Holmbush, with 909 tons, realising 5273*l.*, or equal to 5*l.* 16s. per ton. Then comes the Okel Tor Mine, 690 tons, realising 6744*l.*, or equal to 9*l.* 15s. per ton; Wheal Friendship standing next with 545 tons, which realised 3182*l.*, equal to 5*l.* 16s. per ton. The remaining 12 mines are far behind, as out of the total of 5738 tons, realising 43,498*l.*, the four mines above mentioned produced 5292 tons, and realised 41,482*l.* It will be seen by the above statements that the arsenic from Okel Tor is far superior to any, averaging 9*l.* 15s. per ton as against 8*l.* 6s. from Devon Consols.

The stocks in the country are becoming exhausted, and should the present demand continue those mines that are rich for arsenic have a brilliant future before them, and I would draw particular attention to Okel Tor Mine, where they have nameless quantities of this ore; and by the report published last week the manager reported—the stopes throughout the mine continue to look well, producing 18 tons of arsenical ore per fathom (175*l.* 10s.) They are expecting to hole the new shaft west to the 35 every day. This mine was worked (or partially developed) by one gentleman for some time, and only this year formed into a company. The shares were all taken privately, and, I believe, are in the hands of very few shareholders. And as soon as the engine goes to work (which I believe will be in about four weeks) this mine will be in a position to double its returns—they are now more than paying cost. Besides arsenic, they have a fine tin lode ruuning through the mine, which alone (in a few months) will pay handsomely. The mine is situated close to the River Tamar, and not far from Devon Consols; it is being worked in a systematic manner, and I have no doubt in a few months it will prove one of the few great mining successes. They can command the market for arsenic, being able to raise it much cheaper than any mine in the county. I remind iuvestors to notice such mines instead of rushing headlong into unknown and worthless speculations.—*London, Sept.* 15. INVESTIGATOR.

PRINCE OF WALES SLATE QUARRY (Carnarvonshire).—Operations are in active progress at this property. The level across the western vein has been driven 40 yards. Under date Sept. 10 the manager reports as follows:—"There is a very considerable improvement in the rock in the level—in fact, better than anything we have yet had, and I think there is a prospect of a still greater improvement." The total width of the western vein is 120 yards, thus leaving 80 yards for the cross level still to be driven, which drivage will it is believed open up a very fine body of slate, and enable the company to make substantial profits.

Meetings of Public Companies.

FLAGSTAFF DISTRICT SILVER MINING COMPANY.

An extraordinary general meeting of shareholders was held at the offices of the company, Bucklersbury, on Monday, Mr. GEORGE BURNELL in the chair; for the purpose of passing a special resolution to expunge two clauses in the Articles of Association to meet the requirements of the Stock Exchange Committee.

The CHAIRMAN said it was a promising sign that so many of the shareholders were assembled to transact a formal act of business. A great deal of time had been consumed in interviews with the Stock Exchange in reference to the Articles of Association, and they were a body he supposed who could do what they liked—a sort of City House of Lords.

On the motion of a SHAREHOLDER, seconded by Dr. NELSON, it was then resolved to expunge the following clauses from the Articles of Association:—

44.—All payments of money to or on account of the company for calls which may be made at the offices or to the officers of the company, shall be made at the risk of the persons paying the same, and none but the receipt of the bankers of the company for the time being shall be a legal and valid discharge of the same.

130.—No claim to dividends shall be admitted after six years from the day on which the same became payable; and the moneys to which no claim shall have been established within such period shall be applied to the benefit of the shareholders generally. And the effluxion of the term of six years shall be an effectual bar against all persons claiming, whether such persons shall have been under legal disability or incapacity, or not.

A SHAREHOLDER asked when they had information from the mine?—The CHAIRMAN replied that they had only one letter from the foreman at the mine; which he thought had been made known. It amounted to this, that work was progressing in a satisfactory manner. That letter they received some time ago, and they had not received any letter since.

The SHAREHOLDER: Prof. Vincent said there were 10,000 tons of ore.—The CHAIRMAN: Yes.—The SHAREHOLDER: Has that all been sold?—The CHAIRMAN: No; it has not. From Aug. 11, Prof. Vincent and two other directors have been out of London.

Dr. NELSON said the report was 10,000 tons in sight. He was not a mining engineer, but he thought that meant there was a prospect of 10,000 tons; but it was not on the dumps. When they raised the ore from the ground and put it on the surface; they put it on the dumps. He was not advocating dumping but he wished them to understand that there was a difference between ore in sight and on the dumps. He was not at all despondent. He thought they were in a magnificent district, and he would be in the dumps a year or two hence when the mine had been well explored if it did not give good results. He was not at all in the dumps just now; and he was a pretty large shareholder holding about 750 shares.

Mr. CADOGAN, in reply to a SHAREHOLDER, said that 150,000*l.* of the capital was subscribed, 10,000*l.* was not issued, and had not been offered for subscription; the whole 150,000*l.* was taken up.

A SHAREHOLDER thought that, though the meeting was of a special character, it was quite competent for any shareholder to ask for information of what was going on at the mine. At the same time he thought if they had sufficient control over their manager the directors should have monthly information, and it should be published for the benefit of the shareholders. There should be no excuses, and whether information was good, bad, or indifferent, it should be given to the shareholders who should have the benefit of it. As far as he was concerned he did not expect wonders until the property had been thoroughly explored. He believed they had a good property from information he had received, at the same time, as a shareholder he should like very much to receive from the directors of the company monthly reports of what was going on at the mine.—Dr. NELSON agreed in the suggestion.

The CHAIRMAN, in reply to a shareholder, said a copy of the mining papers containing the last report was sent to all the shareholders.—Mr. CADOGAN added that any gentleman who had not had a paper could have one now.

The CHAIRMAN said the foreman had instructions to send a report more frequently than every month. Prof. Vincent was away, and as it was not his intention to be absent so long he (the Chairman) had been rather in a state of expectancy. They now learned that Prof. Vincent would return to-morrow, when the directors intended to hold a board meeting.

A SHAREHOLDER thought it rather remiss that the Professor had not attended the meeting.—Mr. KERLY pointed out that the meeting was called for a special object, and that, therefore, he would advise the Chairman to reply only to questions bearing upon that object. As to Prof. Vincent's absence, he could not see that there could be much ground for complaint, as he was connected with various other companies than the Flagstaff, and as the shareholders had had a detailed report from him only a few day's previously.

Dr. NELSON said that Prof. Vincent was certainly the last man he should have expected to be absent, and he could only account for it by illness. He was a most honest and straightforward gentleman, and was desirous of affording information to all the shareholders. He should have asked the Professor one or two questions as regarded the prospects of the mine if he had been present, because things were not so flourishing as he thought they ought to be. The district was marvellously rich, he had visited it and had been all through the mines, and all he could tell them was this, that he thought their mine was marvellously wealthy. Of course much depended on the honest working of the concern, and he did attribute to the Professor honesty, integrity, and a desire to make the company succeed for the simple reason that his reputation was involved in the success of the Flagstaff Mine.

The CHAIRMAN: Another consideration is that he is a very large shareholder, and his interest comes in. I think he has 14,000 shares.

Dr. NELSON said that he also was a very large shareholder, and if their machinery was right and had not been too long exposed to atmospheric influences he did think the mine ought to pay.

A vote of thanks to the Chairman and directors then terminated the proceedings.

CHILE GOLD MINING COMPANY.

The statutory meeting of shareholders was held at the Cannon-street Hotel, on Thursday,

Mr. A. G. DALLAS in the chair.

Mr. J. SYKES WRIGHT (the secretary) read the notice calling the meeting.

The CHAIRMAN said: Gentlemen, as you are aware this meeting is merely a formal one, called in compliance with the Company's Act, and there is no business to transact, but I will take advantage of the opportunity to state exactly the position in which we stand. (Hear, hear.) The company, as you are aware perhaps, was registered on May 11 of this year. All the shares, 335,000, have been applied for placed, and paid for with a very small exception. Immediately upon assuming office our first care was to organise a staff to proceed to the mine to take charge upon the company's behalf, the mine being made over to us, as no doubt you are aware, as a going concern, from July 1. We were very fortunate in securing the services of a very important and competent officer, Mr. Aikman, who has gone out as book-keeper and cashier. He is a gentleman whom some of the directors have known for six years, and in whom we place every confidence. Our assayer, who went out with him, is a young gentleman upon whose testimonials we rely, and we have every confidence in him also. Along with him we secured the services of a gentleman, a confidential friend and intimate of some of our directors, who was proceeding to the country, and who has agreed to act on our behalf from the period of his arrival out there until we should organise the remainder of our staff, and especially the most important officer of all, our manager. We have this day accounts of the arrival of Mr. Seymour, not at the mine itself, but at the capital of the country, and he assures us that everything is in perfect order, that the titles are all arranged, and that affairs are working smoothly. (Cheers.) Of course, I had for myself a little anxiety with respect to the manager on the spot, who is not our servant, but has acted for us since the mine came into our hands as a going concern, from July 1; I am glad to say we have received every assurance that he is a gentleman who can be most thoroughly depended upon in every way, both for integrity and ability, and also in zeal for our interest. We have subsequently had the good fortune to secure the services of a permanent manager, Mr. Nicholson, who sailed upon Sept. 2. He is a gentleman who brought us the very highest testimonials a man can possibly have, both for integrity and knowledge of the business in which he is to be engaged. It is also an important point in our favour that he was out at the mine either at the beginning of this year or the end of last year. Therefore, he knows the country and the climate, and is also well acquainted with the mine. He is gone out induced not so much by the immediate salary he is to receive, but with the knowledge of all that is before him there, in the confidence that with the success of the mine his own position will improve. (Cheers.) Our prospectus stated that there were 40 stamps at work, and the mine in full operation. We had intended to supplement that immediately by sending out 60 additional stamps, but we have since been thoroughly considering and going fully into the matter, and we have resolved to confine ourselves, in the first instance, to setting in full operation the 40 stamps we have there, because we were subsequently assured that 20 of these are as good as new, and in excellent working order, and the other 20 only require some little supplement work to make them thoroughly efficient. The engine power which we have is also sufficient to work them, and it would not be sufficient to work 60 other stamps. Therefore, we have confined our operations at present to simply getting the 40 stamps we have on the spot in full working order, until we receive advices from our manager, who is instructed to enter fully into the whole subject with the actual manager on the spot, and with Mr. Seymour, who preceded him, and after full deliberation to advise us what to do. We prefer doing this to sending out large machinery at a heavy cost, which might afterwards be found unnecessary, or at least premature, and might have cripple I us. The only machinery we are about sending out from home is a certain quantity of water pipes, because they will be wanted in any case, whatever we may do afterwards. They are intended to be laid down immediately to secure for us a full supply of water for the works in operation, and also for the more extended ones which we contemplate. Of the forty stamps out there there are only ten in operation, and they produce simply the free gold, a term, no doubt, you all understand—namely, the gold which is visible, and these ten stamps have produced during the last three months somewhere about 400 to 500 ozs. Mr. Seymour cannot explain why there were only ten stamps in operation, but the free gold produced by the ten stamps represents only one-third of the actual gold in the quartz; the remainder of the gold-bearing quartz in the shape of sulphurites, is laid aside pending the arrival of the necessary material to work it. That necessary material was ordered months ago,

but part had to be obtained from California, and the other portion went from New York. That is the exact position of affairs at the present time. There are ten stamps in operation, which produced 431 ozs. of gold in the month of July, leaving two-thirds of the gold in the quartz. When we get the 40 stamps in operation we expect to produce at least four times that amount immediately of free gold, and three times that amount of gold from the sulphurites whenever the material arrives out. (Cheers.) So you may judge from that what our anticipations are when we get out the full 60 stamps and in operation, amounting in the whole to 100 stamps. I have only now to say, for myself and colleagues, that no circumstance has occurred in the slightest degree o shake our confidence in all the statements put forward in the prospectus. You now know the state of affairs pretty nearly as much as we do. We have taken all means in our power to sift every statement made, and up to the present time I have never heard that the richness or extent of the mine has been impugned in any way. The richness and extent of the mine has been the sole basis upon which I have been induced myself to enter into the affair at all; nothing has occurred to impair my confidence. (Cheers.) I have nothing further to say, but if any gentleman has any questions to put I shall be happy to answer them. (Cheers.)

Mr. ATKINSON said he had heard that Mr. Atwood had reported to the Potosi Company that this company's property was not worth 100,000*l*. He asked whether this was the case?——Mr. ATWOOD: I deny it *in toto*. I never made but one report, and that is the one which you have. (Cheers.)

Mr. SHIRLEY said he would like to know whether the quartz which was treated was in any way selected?——Mr. ATWOOD said it was not selected in any way. Everything which was taken out was put through the mill. There was no selection of the quartz. If that were selected they would reckon not by ounces but pounds to the ton.

Mr. PONTIFEX (a director) said it might be re-assuring to the shareholders to hear one of the two reports from entirely independent sources regarding the value of their property. In a report given by Mr. Lambert to the directors of the Nouveau Monde he referred to the Mocupia Mine (now the Chile Mine), and said that the Mocupia was then working upon ground giving 4½ to 5 ozs. per ton, and he went on to state that this lode, which traversed the Chile sett, was peculiarly constant, and traversed a portion of the Nouveau Monde. There was another report from Mr. Oxland, who expressed a precisely similar opinion. He thought those reports were very satisfactory, and he thought the shareholders would be pleased to know the statements which had been put forth had been confirmed by independent authority.

The CHAIRMAN said he would read a telegram received just before coming to the meeting. It said:—"No trouble whatever with the customs." He had heard it stated, and no doubt the shareholders had also, that there was no dependence to be placed upon the Government, therefore the assurance contained in that telegram was satisfactory. It had also been stated that the cost of freight to the mine was very heavy, and no doubt it was, and the directors had based their calculations upon freight at 40*l*. to 50*l*. per ton. The telegram stated:—"Freight from London to mine 39*l*. per ton." The telegraph went on to say—"Titles are all in good order, and in Mr. March's hands, waiting authorities to register them in successors." Mr. March was the acting manager. There had also been a question raised as to whether there was a proper supply of wood, and on this point it was satisfactory to know by telegram that there was an ample supply of wood.

The CHAIRMAN, in reply to Mr. RUMNEY, said no commission of any kind had been paid by the company in starting, but simply the ordinary brokerage.

The CHAIRMAN, in reply to a further question, said application had been made for a settlement and quotation on the Stock Exchange. Nothing could be clearer than the papers and documents submitted, and there was no reason to doubt that a settlement would be granted.

On the motion of Mr. PETER MORRISON, a cordial vote of thanks was passed to the Chairman and directors, and the meeting separated.

THE TAMBRACHERRY ESTATES AND WYNAAD GOLD MINING COMPANY.

The second ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Monday,

Mr. JAMES LABOUCHERE in the chair.

The notice calling the meeting was read by Mr. H. TOLPUTT, the managing director.

The CHAIRMAN said that in rising to address them for the second time within a few months he must apologise for doing so; the reason was a very sad one, and that was that their co-director, Mr. Herbert Knowles, was unavoidably absent through illness, but for which he would have been present at the meeting. At the last meeting the company had just been formed, and the directors placed before the shareholders the subject of the sale of a portion of their land to a separate company, called the Cootacovil Company. That sale had been effected, the deeds executed, and the money received, and the shareholders were called together to-day to declare a dividend out of the proceeds of the sale. (Hear, hear.) The sale was on the following terms. The Tambracherry Company bought some estates in the Wynaad for 120,000*l*., and resold a part of these estates for 60,000*l*., thereby reducing the actual cost of the property to the actual value of the coffee and cinchona, without taking into account the value of the gold. The Tambracherry Company now proposed to accept 32,000*l*. in shares of the Cootacovil Company in part payment, and 28,000*l*. in cash. The board now propose to declare a dividend of 10 per cent. out of the cash, which would absorb 16,000*l*., and to appropriate 4000*l*. to cover the preliminary expenses in England and India, which were very heavy; they had been increased through the action of the Indian Government, which had increased the transfer duty of any new deed to 1 per cent., the duty in this country being ½ per cent. That disposed of 20,000*l*., leaving 8000*l*. in hand. The 20,000*l*. formed one-third part of the sum of 60,000*l*. for which they sold the Cootacovil Reef, and the directors were advised that they could divide that amount as profit, keeping the purchase-money in hand until they could see what was required for the further development of the property, which was very extensive, and some time must elapse before they could decide what money would be required to develope it. The remaining 8000*l*. the directors wanted to keep free and in hand. In about half a year's time, when the annual accounts were made up, the directors would see whether they could not divide it. They also hoped at that time to show a fair profit on the coffee of this year, and some profit for the interest of the capital invested. (Hear, hear.) The company took possession of the estates on May 1, and since the beginning of June the directors had been working hard, and the manager had done all he could to drive right and left, but he had concentrated his chief attention on the Cootacovil Reef, which, as he had said, was formed into a new company, but in which the Tambracherry Company held an interest to the extent of 32,000 shares. There was a meeting of the Cootacovil later on, and, therefore, he would not go further into the subject now, but he might mention that every care had been taken to push forward the work, and the machinery would be shipped shortly, and he hoped in a few months they would have actual results, which would tell upon the value of the shares of both companies. In a few weeks' time the manager would receive the assistance of several men whom the directors had engaged and were sending out to India. The manager was very busy, and there were half a dozen outcrops for Mr. Harvey to look at when he arrived. It was the intention of Mr. Harvey to start almost immediately for Australia to engage mechanics, and such sort of men, and take over to India and set them to work in the reduction works, and also in exploring and defining certain reefs which were being opened for inspection. He then read a letter received that morning from the manager in Wynaad, and observed that the manager went on to say he was glad more men were going out, as he was over-worked. The letter also went on to say that he was preparing bungalows and lodgings, and had done everything to receive the men, and there would be stuff enough to begin to work upon when the machinery was ready, and he added that when once he began he intended to work steadily on week to week. The cultivation of coffee and cinchona had gone on unimpaired since the present company came into existence, and the attention of the directors this year had been directed to increasing the number of the cinchona trees. The number was now about 300,000, of which about 100,000 had been planted during the last three months. In a few months the directors hoped to have some definite information about the present crop and the trees they were growing. The directors did not lose sight of this, but it was of minor importance as compared with the question of gold. They had had good dividends for coffee, but they hoped to have still larger dividends for gold. (Hear, hear.) The directors hoped, by pushing on, to get results as soon as any other company. The secondary object was, they had a reef running from north to south, and they would work upon that, and when Mr. Harvey got out to India, in about two months' time, they hoped to have the other reefs sufficiently advanced, so that Mr. Harvey could look at and test them. He should not be surprised to have several offers for the outlying estates in the direction of north-east, where they were now working. There was the Eva, next the Adelaide, and then the Chundale, all of which were capable of being sold separately to individuals or companies. After the quiet times they had gone through during the past few months in mining there might be a better chance of selling these. He would propose that a dividend of 10 per cent., free of income tax, on the capital of the company be paid to the shareholders out of the cash portion of the purchase money of the property sold by this company to the Cootacovil Company. (Cheers.) The dividend would be paid in a few days.——Mr. ARBUTHNOT seconded the motion.

The CHAIRMAN, in reply to a question, said that 10s. per share had been paid up, the call had been answered in full, and there had not been a single hitch.

A SHAREHOLDER thought the directors were perhaps a little premature in declaring this dividend, and suggested that if they waited a little time they might have been able to pay 15 per cent. If they proved they had gold the value of the property would be greatly increased. He also expressed an opinion that the 32,000 shares might be very properly placed to a reserve fund.

The CHAIRMAN said the directors did not wish to do anything sensational. As he had stated, they had now a dividend of 5 per cent. in hand, and the directors hoped in another six months to enhance that by the sale of coffee and the interest on money invested. The directors considered that if a company began to pay its way, and went on steadily increasing its dividend, it was preferable to paying a high dividend one half-year, and then perhaps being compelled to pay a low dividend the next. (Hear, hear.)

Mr. DUNLOP, C.B., said he had been 22 years in the civil service of India, and in the district in which he was stationed—the Upper Ganges—he had seen a considerable amount of gold washed from the metamorphic rocks. He took great interest in these discoveries in his own province, and he had also taken great interest in the re-discovery of gold in Southern India. He did not hold a single share in any gold mining company in India except the Tambracherry, and having gone into the whole question, he had no hesitation in saying that he believed the intrinsic value of Tambracherry shares was fully equal, if not superior, to those of any company in India. (Cheers.) He believed they had an excellent property in Tambracherry. He also thought that Cootacovil was a good undertaking; and if the market allowed him he should be happy to increase his interest in that undertaking. (Cheers.) He was sure all the shareholders would feel that they could thoroughly trust the directors to manage the properties, and also to judiciously spend the money they had in hand. (Cheers.)

The resolution was then put and carried.

Mr. H. TOLPUTT: May I ask those gentlemen who have not claimed their certificates to be good enough to do so. There are about 200 who leave their certificates in my hand; if they send their bankers' receipts, the certificates shall be sent by return of post.

The CHAIRMAN, in reply to a SHAREHOLDER, said the machinery for both the Tambracherry and Cootacovil would be sent out the last week in October. The Tambracherry machinery was ready now, but there was no vessel leaving for the coast earlier than the end of October, and there would be no saving from sending it by a round about route.

A vote of thanks to the Chairman and directors closed the proceedings.

THE COOTACOVIL GOLD MINING COMPANY.

The statutary meeting of shareholders was held at the Cannon-street Hotel, on Monday,

Mr. JAMES LABOUCHERE in the chair.

Mr. H. TOLPUTT (managing director) read the notice calling the meeting.

The CHAIRMAN said that the notice of meeting which had been sent round contained pretty well all that he had to say to-day. This was a statutory meeting, at which it was very difficult, as a rule, to say much, but he was glad to think that in this company they were further advanced than in many companies which were started at the same time or before this. (Hear, hear.) As usual, when a company was formed they had to get a conveyance, and this, as usual, had been delayed, and it so happened that the exact sketch map came in a little late, but in due time the property had been handed over to this company by the vendors, the Tambracherry Company, and the money had been paid over by the Cootacovil Company. The directors had called only 10s. per share, which had been sufficient for the purpose of getting possession. There was no intention on the part of the board to call more money just now, but perhaps they might want more money later on. If the Cootacovil found itself a little pinched for money they had a powerful friend in the Tambracherry, who would assist them with a little money. They might look upon the price they gave for this property as very moderate. It had a reef, which was first seen by Mr. Harvey, who surveyed it. He took samples, which were analysed. It had been further tested by an adit, which was driven 50 ft. below the surface, and further tested by another adit, and finally by what was called a main level at the bottom of the hill, where it was intended to put up machinery. They got again the same reef exactly in the line of all the places where it had been seen on the hill in other places. They had proved the reef to the depth of 250 ft., nearly through the hill. More would have been done if possible, but since June they had had the monsoon, and it was dangerous to work underground until the tunnels were supported by woodworks in a correct manner. It must happen from the enormous quantity of rain which had fallen there that water would filter through. One adit had caved in, but no one had been injured. If half-a-dozen men had been killed it would have had an unfortunate effect, because they looked upon native labour as an important part of their business. They had a superintendent who understood native labour, and who had been in the district twenty years, who knew the value of such labour, and was fairly training a set of men to work under the Cornish miners who were to be sent out. As regarded the progress which had been made, the directors had ordered 20 heads of the revolving perpendicular stamps approved by Mr. Harvey, which would be supplied by the last week in October or the first week in November. These stamps would arrive in India about the middle of December; and by the time they reached there Mr. Harvey would have arrived on the spot with engineers and mechanics, and would be prepared to put up the machinery. The choosing and preparing of ground for the mill was a matter of very great importance, for if they put a mill a little too high or a little too low they would incur expenses which would be avoided by more judicious selection of the site. A spot would be selected where they had the best fall of water—the bottom of the hill; and, in future, when they had gone down 250 ft. from the top of the hill to the bottom level, they might have to go lower down, but in the meantime he hoped there would be force enough to work without troubling them with water or anything in the way of pumping. There was the 60 ft. adit, which had caved in, and the superintendent was now cutting another almost next to it. He was also engaged in making an adit 120 to 130 ft. below the surface, which would give a distance of 80 ft. to stope afterwards; and finally they were cutting away on the main level 250 ft. from the surface, where they were energetically carrying on the work and opening out the reef. The directors had sent over a man (who must have arrived there by this time) who had had some years' experience in India, who would be employed in putting up buildings and making himself generally useful. The Cornish miner left for India last Monday; he had served in India in former years, so the directors had secured a man who would at once set to work. Finally, but not least important, they had engaged, under the superintendence of Mr. Harvey, a mine captain, who had held a place of great responsibility. In all they had done the directors had tried to avoid needless expense. They hoped that by the time the stamps were up there would be many tons of quartz ready to be crushed. The directors considered that they possessed a most excellent adviser in Mr. Harvey, and he was very glad indeed to take this opportunity of expressing the entire satisfaction of the board at the way in which Mr. Harvey had commenced operations. It only remained for the shareholders to give him fair time, and he hoped in a few months they would receive excellent telegrams about the progress of the company. (Cheers.) He did not think there was a company started under fairer auspices, and there was not one in which the expenditure had been more carefully watched, or where things had worked more smoothly from the beginning. (Cheers.)

A SHAREHOLDER asked whether they were likely to have a settlement and quotation of the Stock Exchange?——The CHAIRMAN said the papers and documents, which were all in perfect order, were now before the Stock Exchange Committee, and there was every reason to believe it would be granted very shortly—probably in about a fortnight.

A SHAREHOLDER said that probably the meeting would like to hear a few words from Mr. Harvey.

Mr. C. J. HARVEY said that after the explicit manner in which the Chairman had given all the necessary details there was really very little left for him to say. But he might mention that everything possible had been done, not only in regard to economy in the present, but also having regard to the future. At considerable inconvenience to himself he was about to take a trip round the world in order that he might secure for the company the right class of men to put the machinery in order with as little delay as possible, and he hoped on his return to tell them that it was at work. The class of men he would secure in Australia were men who would take it in hand and put the machinery to work, and by that means he hoped to gain some months on those who had started before them on the race for wealth. He was not surprised that one adit had been destroyed, nor would any one who knew what Indian rains were. He was not surprised in the absence of timber one level had caved in. He had advised the manager not to interfere with it, but to start a fresh adit, and in dry weather the old adit could be secured. In the meantime the cross-cut could be proceeded with, so they would have three points of operation which were driven at right angles of the vein, but in the bottom when they would drive on the vein. All they had to do was to push on as rapidly as possible, and then they would soon have eight ends at work, by which time they would have plenty of stuff for the machinery when erected. It would give about 10 dwts. to the ton, and if they got that they would be exceedingly well paid and would have a splendid property. All he had seen of the property led him to believe it was better than he had stated. As he had said, he would push on as rapidly as possible, with the mine legitimately, fairly, and honestly, and he himself was doing all he could to further the interests of the company. He (Mr. Harvey), in reply to a shareholder, said he believed the vein on the estate was a true fissure vein.

A vote of thanks to the Chairman and directors closed the proceedings.

VICTORINE GOLD MINING COMPANY.

The statutory meeting of shareholders was held at the offices of the company, Gresham House, Old Broad-street, on Monday,

Mr. WILLIAM BAXTER in the chair.

Mr. J. JAMESON TRURAN (the secretary) read the notice convening the meeting.

The CHAIRMAN said, Gentlemen, this is the statutory meeting of the company, held in conformity with the Act of Parliament, at which there is really no business to be done, and no resolutions to pass; but it is an opportunity which directors usually avail themselves of to make a short statement with regard to the position and progress of the company from its formation up to the date of the meeting. It is particularly gratifying to the directors to avail themselves of this means at present, inasmuch as everything connected with the company has been of a most satisfactory and gratifying character. Immediately on the formation of the company we dispatched Mr. Morgan and Mr. Morey to California to arrrange for the opening up and development of the mines, and to contract for machinery. They devoted themselves to this task on their arrival there, and after very careful and mature consideration they decided upon erecting machinery for the Mears chlorination process. A contract was entered into by which the contractors are bound under a penalty of $100 every day to have the mill and machinery completed and in running order by Oct. 15, and the recent advices received from the mines leave no doubt that this will be accomplished, and the more our superintendent has enquired and has tested the process the more is he satisfied that it will fully answer with the ores that he has there; in fact, his experiments hitherto have proved that he can extract 95 per cent. of the assay value, which is an exceptionally high percentage. With regard to the mines themselves the superintendent's reports both by letter and by telgeram have been of a most satisfactory nature. No doubt we must assume that all parties interested, both shareholders and bondholders, have read the report of Mr. Morgan, which was circulated with the prospectus. The first telegram we had from him bearing upon that is one dated June 24, in which he says:—"Mine looks splendid, when tram built will commence shipping ores. I confirm report most emphatically; have no fear of a great future." We then go on to July 30, when we received a telegram from him that will, in all probability, have a most important bearing upon the future of the company. It is in these words:—"This day discovered north extension Victorine; named it 'Evening Star,' very important strike; have now 6 ft. ledge growing larger, 750 ore." That has been referred to from time to time in his correspondence. In his letter of the same date as the telegram he goes rather more into particulars. He says:—"About two weeks ago I located in my own name a claim 1500 ft. by 200 ft., which I called the 'Evening Star' Mine, and have the great pleasure in informing you that I have this day intersected 6 ft. of ore. It is opening out splendidly, and increasing in size, and I have without doubt found the north extension of the 'Victorine.' I transfer all my right, title, and interest in the mine to the company. This new strike much enhances the value of the company's property, and is of great importance. The mine is looking well, and everything is all right." The next we have is a letter dated Aug. 2, in which he says:—"Everything is all right at the mine, and the new strike is looking very well, and pitching right into the Victorine ground exactly as I want it." On Aug. 7 he writes:—"I have every reason to believe that we are going to develope a fine mine in the Keystone. The indications were so favourable there that a few days since I started some men to work in the direction, which from the general mineral dip of the hill I considered most likely. We intersected the vein yesterday, and I had one assay of $127 per ton of silver. It is a totally different formation to the Victorine, and I have great hopes that both the Keystone and the Knickerbocker will prove most valuable properties. The Victorine is looking splendidly, just the same, and immediately my wire-rope and rails arrive from San Francisco I will get my tramway up." Then on Aug. 11 he says:—"The Keystone Mine is getting into a really fine streak of mineral; the ore assays over $100, and when I get it opened up and a little more developed, I believe I shall have a very valuable property. Mr. Morey went to the mine yesterday, and was very much pleased with its prospective value. The Victorine is looking splendidly. I am more pleased with the mine every week. It is the biggest mine I have ever seen, and I have reported on more mines than any mining engineer on the Pacific Coast." Then this morning we have received a further telegram from Mr. Morgan with reference to this, in which he says:—Have new strike of ore 4 ft. wide at point where Evening Star and Victorine join; average assay $1080 to the ton. Took out 4 tons first day. Improving every foot." That brings the information from the mines up to to-day, and is, of course, most important on the future bearing of the property; in fact, all the information we have received both directly or indirectly leads us to believe that the property is of most exceptional value, and such a one as seldom comes into the English market.

Mr. MACKINNON: I presume you will not commence to stamp till October.——The CHAIRMAN: October 15 is the date to which the contract has been made. Although we fully expect, and have no doubt, from the information we have received, that we shall commence at that time it will not be a matter of very much disappointment if there is a slight delay, for the contractors are under a penalty of $100 a day.

Mr. MACKINNON: How many tons do you expect to work per day?——The CHAIRMAN: We are going to put up 30 stamps, and Mr. Morgan estimates that he can treat 2½ tons per day with each head; that would be about 70 tons a day, and the average assay, according to the reports of the large number of assays he made was something like $75. He estimated that it will only cost $10 per ton, and do the whole of this work.

Mr. MACKINNON: With regard to the interest to be paid on the bonds, who pays that? Is it the vendor or the owner of the property? or do you pay it out of the capital?——The CHAIRMAN: The interest just paid has been paid out of capital necessarily. That is the only source.

Mr. RICARDO: In borrowing this money we borrowed sufficient money to pay the whole of the expenses of developing the mine, and to pay the 10 per cent. interest which he guaranteed to pay, and also to pay 100 per cent. in redeeming the bonds. That made 100,000*l*. It seemed rather onerous to pay 200 per cent. back, and 10 per cent. in the meantime, but he was quite satisfied that the mines could stand it.

The CHAIRMAN: Mr. Morgan, in whom we have the utmost confidence, says that he has reported upon more mines than any other engineer on the Pacific Coast, and he says emphatically that he had never seen so big a mine as this. Nothing could be more encouraging or more satisfactory than the reports we have received, the salient points of which I have read over to you. The telegram received this morning is something surprising, showing as it does an average return of over 200*l*. per ton of ore crushed. It is something enormous to get a yield of 60 ozs. to the ton, and he must have made a certain number of assays, because he speaks of the average.

Mr. MACKINNON: I suppose 1 oz. to the ton would pay?——The CHAIRMAN: Yes. Mr. Morgan estimates the total cost of treating the ore at $10 per ton. One ounce of gold would leave a good margin of profit. I believe the mine is so situated that for years to come they will have nothing to do but to stope the stuff and let it fall into the tramway. That of course will make a great difference in the cost of working. In Mr. Morgan we have a man we can thoroughly trust.——The meeting then closed with a vote of thanks to the Chairman and directors.

PIERREFITTE MINING COMPANY.

The annual general meeting of shareholders was held at the company's offices, Great Winchester-street, on Sept. 7,

Alderman Sir THOMAS DAKIN in the chair.

Mr. J. R. COOMBS (the secretary) read the notice convening the meeting, and the report and statement of accounts were submitted.

The CHAIRMAN drew attention to the report, which was signed by Captain Rickard, and observed that the directors deemed it of the highest importance that the directors and shareholders should have, on very competent authority, a description of their property, and an estimate of its value, and that not from their own officers, but from some gentleman of known ability and unimpeachable integrity, without the slightest interest one way or the other—that this gentleman should visit their mines and give a complete report. That report lies at the foundation of what the directors had then to say, because if they could impress upon the shareholders their and Capt. Rickards' conviction that they had a property of great value it justified them in going to the increased expenditure that they contemplated to develope it, and taking leisure for the purpose. He had stated at the last meeting that the object of the directors was to ascertain as early as possible the value of the property, and it was determined to have a preference capital of 20,000*l*. in the first instance to develope the value of the property and the capabilities of the mine. They had most industriously pursued that object during the interval. The directors had personally visited the mine, had bestowed the utmost attention upon all reports coming from it, and Mr. Shillitoe and he visited it, whilst Mr. Ashby and Dr. Rutter were only just returned from a second visit, and, therefore, as far as their opinion went they were confirmed in the value of the property; but still it was of great importance that they should have the opinion of a man like Capt. Rickard. You will, he continued, remember that last year, when we proposed for this 20,000*l*. of capital, only one level was opened, but Capt. Rickard states here—"There is a large accumulation of orestuff in this level which we have not been able to carry away, on account of the want of the wire tramway which is in course of erection." We have opened up No. 2 level, and he says—"At both points the parts of the lode seen are productive of lead and blende in paying quantities, which will be further developed by being undercut later." Of No. 3 level he says—"Altogether the above workings show the existence of three distinct parts of a large mineral formation, productive at all points opened on." Besides that, there is the south lode, to which he has referred, and which has been to some extent the cause of the delay with regard to finishing the wire tramway. The workings consist of an irregular excavation to a depth of 50 or 60 metres, and a variable length of from 20 to 8 or 10 metres. The lode varies in width from 2 to 5 metres, showing some very rich trenches of large grained galena and blende of good quality, and altogether capable of producing a large quantity of orestuff. Therefore, instead of having but one level we have these two others, and the south lode developed, and all showing great promise of rich ore. Of course, we could not do all this work and get the proper machinery for utilising the stuff within the short space of a year. Those who know anything of mining operations know it takes a long time to get all these matters into perfect order and the machinery ready for use; but we are now nearly arrived at that point. He then went on to state that they had put up two small crushers, so as to enable them to make returns whilst the machinery which was ordered of Green, of Aberystwith, was being got ready. He admitted that they had a balance on the wrong side of 2652*l*. 11s. 7d., but explained that that had been owing entirely to a large portion of the ore which had been won and worked in the mine not being brought down for operating upon owing to the absence of the machinery. The value is stated in Capt. Richard's report to be 13,000*l*., and if you take one-half of that as the cost of bringing it to market, it leaves an asset of about 6000*l*., which they reasonably put as having been gained by mining operations in the last year. If, he continued, you look at the account you will find the apparent debit of 2652*l*., but, according to Capt. Rickard, these 4740 tons, at the present low price, would be equal to 6000*l*., and if you deduct the debit you leave a profit of about 3500*l*. Although we have not put it in figures to the account yet it is truly and substantially ore that has been wrought, and is ready for use, and that will be turned into money and be available for dividend. This result was obtained in a year when we were labouring under very disadvantageous circumstances, and you draw from the result your own conclusions as to what we shall do when we shall have our large machinery perfect and at work. I make this statement in order to prepare you for what I am going to propose, and that is as to the raising of fresh capital. The liabilities form 8890*l*. 5s. 9d., and on the other side we have cash, and ore sold for cash, 2569*l*. 11s. 3d., so that our debit balance is 6420*l*. 14s. 1d. We have to add to that an estimate of what we have to pay for dressing machinery and the completion of the works altogether, and carrying on the mine for five months. We estimate that will cost us about 5000*l*. before we shall come into the receipt of money from mining. Therefore we take it roughly that we shall want between 11,000*l*. and 12,000*l*. of fresh capital. The directors have taken pains to ascertain the value of the mine and the probable result, and I think from the statement I have made, and the statement of the report, that we must take advantage of obtaining this additional capital in order to bring our enterprise to a successful result.

Mr. ASHBY, a director, said that having recently returned from a visit to the mines, which he made in company with Mr. Rutter, he wished to express his entire concurrence with the report of Capt. Rickard, and the way the managing director, Mr. Jeffree, had conducted operations. Unfortunately in France they would not take contracts as here, but were ready enough to work at measure and value. Had the directors been able to get a contractor the works would have been erected much more expeditiously and at less cost. He paid a visit with his fellow director to the Castillion Mine, which, in his opinion, might hereafter become a more valuable acquisition than the mine now being worked. He hoped they would soon be in a position to work that mine in conjunction with the others, and as sure as they did so, so sure were they to realise large profits.

Mr. T. QUINLAN said he attended the last meeting a year ago and was very much disappointed at the result, especially after what Mr. Jeffree, the managing director, then stated. He thought the directors ought to explain how it was that another year had elapsed, and they were really in the same position as before.

The CHAIRMAN said the directors lost no time in obtaining tenders. They got the advice of Mr. Sopwith, and steps had to be taken with great judgment and consideration. The contract was to have been finished by the middle of July, but there had been a delay, as before explained. They had to buy land to form the dressing floors, and he certainly did not think the board could take any blame to themselves. The directors had all a large interest in the company, and instead of deserving blame they rather merited commendation.

Mr. URWICK said he believed the directors were as good as they could possibly be, only he would like to have seen them display a little more energy.

Mr. JEFFREE, in the course of some further discussion, stated, in reply to a shareholder, that the property was purchased in March last, but no operations were commenced till May. In six weeks they would be in a position to sell from 1600*l*. to 2000*l*. worth of ore monthly.

The report and accounts were then adopted, and it was resolved that the additional capital required, not exceeding 20,000*l*., should be raised by debentures: the Chairman and Mr. Ashby were re-elected directors, and Mr. John Walker, of Croydon, was added to the board; and the auditors, Messrs. Turquand and

Co., were re-appointed auditors at 20*l.* remuneration. The usual complimentary votes terminating the proceedings.

POLROSE MINING COMPANY.

At a general meeting of shareholders, held at Gracechurch-street on Wednesday (Mr. F. HODGKINSON in the chair), the accounts, showing a balance of liabilities over assets of 309*l.* 7s. 6d., were submitted and passed, and a call of 1s. 6d. per share made. The following is a copy of the agent's report which was read to the meeting:—

Sept. 12.—I beg to hand you the following report for the general meeting to be held on the 14th instant:—The 100 east on Margaret lode is driven 12 fms. from the cross-cut, for the whole of which distance we had a promising lode, with the strongest tin in the bottom of the level. The lode in the present end is 2½ ft. wide, composed of peach, mundic, and saving work for tin; driving by four men, at 6*l.* per fathom. The 100 west on Margaret lode is driven 23½ fms. from the cross-cut. For the last few fathoms the lode has been disturbed by the sparry cross-course that we had in the 90. I think we are now getting away from its influence, and when in settled ground again I have every reason to expect an improved lode, as there is a promising lode in the bottom of the level above; this end is driving by four men, at 5*l.* 10s. per fathom. The 90 west on Margaret lode is driven from the shaft 55 fms. During the past quarter the lode has been small, and disordered by the western cross-course, but we are now nearly 2 fms. beyond the cross-course, and I am pleased to say the lode is already considerably improved both in size and character, being now fully 2 ft. wide, composed of spar, peach, and mundic, with a little tin. This being our pioneer level going west a discovery here would be of the greatest importance; driving by four men, at 5*l.* per fathom. The 90 cross-cut south is extended 64 fms. from the shaft. The end has lately again become mineralised, from which it would appear we are getting near another branch or lode. Taking the line of the Orchard lode at surface as laid down in the old plans, and allowing the average underlie of 2 ft. in 1 fm., this cross-cut should now be within 10 fms. of the lode; driving by four men, at 5*l.* per fathom, in a favourable channel of ground.

About a month after the last meeting we resumed the 90 cross-cut north, and after driving 5 fms. we cut a lode about 1 ft. wide, on which we have since opened 9 ft. east and 9 ft. west. This lode is of a very strong character, and has yielded some beautiful yellow copper ore, and we find also a little tin mixed with arsenical mundic. In the east end there is now a leader 4 in. wide in the lode, which for about 2 ft. up from the bottom is composed of solid yellow copper ore. Going west the copper is more mixed up with blende and mundic. Altogether the appearances are most encouraging. Driving by six men, at 5*l.* 5s. per fathom for each end. There was a cross-cut formerly driven north from the old diagonal shaft at the 70, the end of which is now filled up with stuff, but the water in it having gone down since we cut the lode in the 90, I purpose clearing it out and extending it to cut the lode, when a communication can be made between the two levels that will give good ventilation and enable us to work the ground. We have had good progress in clearing the western adit by four men; we are still in the level on the caunter lode, and must be getting very near the run of the Orchard lode, next to which is the Bor lode. Since the last general meeting we have driven on the Margaret lode at the 90 and 100 fm. levels 37½ fms., cross-cutted south 17½ fms., cross-cutted north 5½ fms., opened on the new lode 3 fms., in all 63½ fms.; we have also cleared and secured 40 fms. of the western adit, and opened a shaft 9 fms. deep on the same.

Seeing that the Margaret lode at the 100 has all the way east of the cross-cut and some distance west produced saving work for tin, looking much better, especially in the bottom, than it did in any of the upper levels, I think we should see the lode 10 fms. deeper. To do this most effectually and cheaply we ought to put up a rise from the 100 to the 90 on the lode, and then sink on the course of the lode below the 100. I strongly recommend commencing the rise above the 100 at once, for which purpose four additional men should be taken on, as I would not advise suspending the 100 east and west. The lode in the 90 north should be opened on east and west with all dispatch, and when the communication with the 70 referred to above is effected, we shall be able to work the lode above the 90, and also have air for driving the cross-cut a little further to see if there is more lode yet to the north. I fully expect the 90 cross-cut south and the western adit will throw considerable light on the south ground in the next three months. The prospects on the Margaret lode, and the lode in the 90 north, are very encouraging; what I have seen in the past quarter strengthens my opinions that the mine should be vigorously worked.—WILLIAM BENNETTS.

THE UNITED SHEPHERDS WHEAL ROSE.

The statutory meeting of sharcholders was held at the Cannon-street Hotel, on Sept. 2,—Mr. THOMAS EYRE FOAKES in the chair.

Mr. C. E. WRIGHT (secretary) read the notice calling the meeting.

The CHAIRMAN said he understood that Mr. Good, who was the writer of a circular to the shareholders of the company, was waiting outside the room, wanting to know whether he might be permitted to attend. The board had no objection whatever to Mr. Good being present, but he should mention that Mr. Good was not a shareholder, but merely a liquidator—not of this company at present. Of course, Mr. Good was not entitled to be present in law, but it was for the shareholders to decide whether Mr. Good should be present or not.

A SHAREHOLDER: What interest has Mr. Good in the proceedings to-day?——The CHAIRMAN: As far as I understand his interest is to wind-up the company, and it is to our interest to keep it going. (A laugh.)——On a show of hands it was decided to admit Mr. Good.

A SHAREHOLDER mentioned that he believed Mr. Good represented 8000 shares.

The CHAIRMAN said the object of this meeting to-day was threefold; first, to comply with the statutes, which required a meeting to be held within four months of the constitution of the company; secondly, to explain something about the constitution of the company; and, thirdly, to answer the statements which had been made by Mr. Good. With regard to the first point, he would say nothing. As regarded the second point, he had some few words to say. It had been said that the directors asked the shareholders to subscribe for 100,000 shares, and that they were going to pay 35,000*l.* for the mine—25,000*l.* in cash and 10,000*l.* in fully paid-up shares. The subscriptions for the shares came in very rapidly; all the prospectuses were taken out of the directors' hands within a few hours of the time of their being printed. So numerous were the applications for prospectus, and so numerous the applications for shares, that they thought they might close the share list on the Wednesday and Thursday following the Saturday on which the prospectus was issued. There was no doubt that in this they made a mistake; they should have given a longer time for the country people. The result was that the actual number subscribed for was 19,199 shares. He and his colleagues decided that on that application they would not be justified in going to allotment unless some modification was made in the price given for the property. After some discussion, the vendors, to show their faith in the value of the property, said they would take 1750*l.* in cash, and 18,250*l.* in shares, if the directors would allot the shares, and on that understanding the board proceeded to purchase. If the property was worth anything at all that was not a bad bargain to be made on behalf of the shareholders. There was a supplemental clause in the new agreement, by which it was provided that if the company issued more shares one-third should be paid to the vendors. The directors had the advice of experienced men, and Mr. Rolfe had reported that with 20,000*l.* they could develope the property and make it a good concern. Although they could not develope it to the same extent as if they had 100,000*l.*, but could make it a valuable and profitable mine for the shareholders. Looking at the large number of gentlemen whose names appeared on the prospectus, and who had given a good opinion regarding the value of the mine, he thought the shareholders would consider that the directors had done well. (Hear, hear.) Amongst the names of those on the prospectus giving good reports of the property were those of Mr. Rolfe, Mr. Symons, a mining engineer in Truro, Mr. Wm. Tampling, Captain Stephen Richards, Capt. Charles Oates, of Calstock. Under these circumstances what would the shareholders, as men of business, have done. He might mention that he and his colleagues had inspected this mine, and, although he did not profess to be a miner, still he had had a great deal of experience in mining matters, and he must say he had seldom seen a property which, to his mind, bore the impress of being more valuable. (Hear, hear.) On one side they had the Old Shepherds, which was sinking on the edge of this company's property, and were sinking on a good lode, so this company might look for a continuation of that lode. On the other side they had the North Shepherds, where they had come upon a good lode of lead within a short distance of this company's mine; so he thought they had a property such as was possessed by few companies, and certainly he did not know in Cornwall or Devonshire a finer property than this company had got. (Hear, hear.) What did Mr. Good propose to do? He proposed that the company should be wound-up. The effect would be that the shareholders would be called upon to pay up the whole of their shares, and out of that there would be paid the few debts which the company owed, and all the expenses of the liquidation, and whatever surplus remained would be distributed amongst the shareholders. When they had such a valuable mine was it worth while to run the risk of wasting what had been paid, and perhaps a good deal more. Surely it was worth while to work the property, and see what it would do. Then they had also the opinion of Capt. Henry Miners, who had recently been appointed the company's agent. The directors had subscribed for their shares the same as the other shareholders, and they wished to manage the property in a business-like and satisfactory manner. The directors had received three or four letters from shareholders withdrawing the support which they had given to Mr. Good at the meeting held at that gentleman's office, and expressing the hope that the sharedolders would stick together and prevent a winding-up. There was no doubt the property had been damaged by the petition which had been presented by Mr. Spiller. Having run through the petition, and pointed out that it contained statements which were not in accordance with fact, the Chairman went on to say that there were only 20 gentlemen present at Mr. Good's meeting, out of a total number of shareholders of 280.

Mr. HENDERSON said that when the resolution was put to the meeting at Mr. Good's office there were 9 gentlemen who voted in favour of it, and 8 against it, so it was only carried by a majority of one. Two or three gentlemen did not vote.

The CHAIRMAN said he did not think such a small majority should be allowed to prejudice or control the company. (Hear, hear). If shareholders had anything to complain of, the straightforward way was to ask the directors to call a meeting, which the directors would have been happy to do. (Hear, hear.)

Mr. GILLFORD said he attended the meeting at Mr. Good's office. There was no wish to disparage the mine, but there was such a departure from the prospectus that some of the shareholders thought they were entitled to a return of their money. When the directors found the subscriptions were so small, he thought the directors should not have allotted the shares, but should have called the shareholders together and taken their opinion as to what course should be adopted. He might mention that Mr. Good had the support of 8000 shares. He went on to say that he and those acting with him would desist from their proceedings if the present meeting were adjourned, and properly qualified men called in to examine the property and report upon it. He suggested that Mr. Peter Watson should be asked to report upon the mine.

The CHAIRMAN: I know Mr. Peter Watson, and a very good fellow he is, but I should not go to him to ask him to report.

Mr. OWEN said that he had been asked by Mr. Gillford to buy his shares, but in consequence of the depreciation owing to this agitation, and the depreciation in the value of the shares, he had declined to do so, and had returned the transfers to Mr. Gillford, seeing that he was a litigious sort of person.

The CHAIRMAN: Before I left London I was in negociation with a large firm of stockbrokers who wanted to know upon what terms they could have 350,000 of our shares, but since this agitation that has fallen through. If that had been carried through, it would have fully developed the mine.

Mr. GOOD said he had taken action in the matter, in consequence of having been applied to by shareholders to make enquiries relative to the merits of the mine. He did so, and the result of these enquiries was unsatisfactory, and the first circular was sent out which brought him lots of assent and authority. He had no personal interest in the matter, but was simply acting for his clients. He was supported by about 8000 shares, the holders of which thought the directors were not justified in proceeding to allotment on the number of shares applied for. He was bound to say when he went to the office of the company the secretary gave him every information in his power, and freely opened the books for his inspection. He asked the Chairman how many of the shares had the allotment money paid.——The CHAIRMAN said the number of shares allotted was 19,199, and the number on which the allotment money was paid was 13,150.

Mr. GOOD went on to say that before proceeding to allotment the directors should have consulted the shareholders. He contended that the statement that the directors intended to apply for a quotation tended to mislead the shareholders, because they could not get a quotation unless two-thirds of the nominal capital of the company was subscribed. His clients had discovered the "nest" from which this company had sprung, and the object of the shareholders for whom he was acting was to obtain a release from their liability, and to expose what they considered a fraud. He did not say this in respect to the Chairman and directors, because he did not know where the fraud rested, but that there had been a fraud he did not doubt. He wished to draw a distinction between the directors and the vendors. The petition was put on the file not with the intention of obtaining liquidation costs—nothing of the sort.

Mr. COOK pointed out that there were Cornish Mines and Cornish Mines, and some might be very good whilst others might be very bad. He agreed that some further enquiry might be made with advantage, but such enquiry should be authorised and carried out by the shareholders, and not by a "hole and corner" meeting. He proposed that a committee of the shareholders should be appointed to confer with the directors, and satisfy themselves whether they were justified in carrying on the undertaking.

The CHAIRMAN said there could be no possible objection to such a course, and he would himself have no objection to second the resolution.

Mr. GOOD suggested that the mine should be examined by practical men.

Mr. J. T. HENDERSON said he attended the meeting at Mr. Good's office, and told the meeting he thought it was neither fair nor courteous to the board of directors to pass a resolution without hearing what explanation the board of directors had to give—(hear, hear); and he proposed that the meeting at Mr. Good's should be adjourned till after this meeting, in order to hear what the Chairman had to say. That would have been a fair course to adopt. (Hear, hear.) As had been stated, the resolution which was carried at Mr. Good's meeting was only carried by a majority of one. He supported the suggestion for sending down experts to further examine the mine.

After some discussion, the resolution was not put, but a resolution was passed requesting the directors to send down experts to further examine the property and report upon it, and that the directors should call another meeting to receive those reports.

Capt. H. MINERS then gave some particulars regarding the present condition of the property, and fully corroborated all he had previously stated regarding the value of the property. He said he believed that if properly worked they would have a thoroughly successfully property.

Mr. ROLFE also repeated the opinion he has previously expressed regarding the value of the mine.——A vote of thanks to the Chairman for his ability and courtesy in the chair closed the proceedings.

THE CAMBRIAN MINING COMPANY.

The adjourned extraordinary general meeting of this company was held on Thursday at the Cannon-street Hotel,

Mr. ADAMS, in the chair.

Mr. BROWN, having read the notice convening the meeting,

The CHAIRMAN said that if any gentleman had anything to say, or any questions to ask, he was now at liberty to do so.

Mr. LODWICK said that before the resolution was put to the meeting he desired to say a few words upon it. He thought that the election of directors was a very important matter, and therefore everybody should know who the directors were they were about to appoint. Mr. Adams was well known to everyone. They knew that he was a practical man and understood mining and engineering, and therefore no better man could be elected. He did not know whether the shareholders present knew who the other gentleman was, but he would state what he was, that they might know whether he was a fit person. As far as mining matters were concerned, he could not say that he had a practical knowledge, but he owned shares in several companies and had seen reports of mining companies, and had visited certain mines, and so on. On the other hand, he could claim to have some knowledge as a business man. For 20 years of his life he was an official to the Government of India. He rose from one degree to another till he was accountant-general and governing-director to the Bank of Madras. In that position he had very great responsibility and a salary of 3000 a-year. He need hardly say that a man who held that position had great responsibility. He had a large establishment of clerks under him, deputies, and so forth, and assistants of all kinds, and therefore he must know what business matters were, and how to conduct them. So far, he had some claim, he thought, therefore to be appointed, but beyond that he had none. If they knew of any better man than himself, who they thought had more knowledge of mining matters than himself, they should elect him. Of course, he was quite prepared, and so were all the others who were to be appointed, to work gratuitously until the mine paid 5 per cent.; but, at the same time he thought, while they were quite prepared to work without fees, and to pay all their expenses up to meetings and that sort of thing it would be fair, when they took long journeys to the mine, to have their travelling expenses paid. (Cheers.)

Mr. GREY said, as the other gentleman named as a director, he ought to follow with some remarks on his own qualifications. He did not wish to put any forward, but simply accepted the proposal made to him by several of the largest shareholders. The only qualification he could put forward was that of a business man, and one who intended, if elected, to do the best he could for the shareholders.

The CHAIRMAN was very glad to hear the statement Mr. Lodwick had made. He thought it would be satisfactory to every person. Mr. Grey he knew very well, as he was connected with other matters. That gentleman was retired from business and was in good health. He had little or nothing to do to occupy his time, and could work for the shareholders until they were able to pay for it. He was one of the best men at accounts, and kept books most correctly, so much so that he (the Chairman) had no trouble, but could understand them at a glance. In himself, he was a practical engineer. He had in his life earned his daily bread in a mine. He had commenced his career as engineer with Robert Stephenson; he had been in the Government service, and had been with John Penn, the great engineer, and had also been employee to the Humphreys and Tennant, in whose service he met with his accident. He had been an engineer all his life, and was now in business for himself, and had been since 1863, and he had no reason to complain. Whatever he did he would pay a dividend, otherwise he would not be there long. He would work the mine; that would be the thing to which he would direct his attention. Whatever there was in the mine should come up and be sold. All that it was possible to do would be done. There was more peat at the mine than they could use in 500 years. There was no necessity for coal, and it was his intention, in conjunction with the rest of the directors, not to go to the expense of carrying all the ore down 9 miles upon a road where two vehicles could not pass—where they must all go together and come back together. They would not do that, but they would erect furnaces that would not cost a great deal, and they would smelt the ore and send on the refined stuff. By that means they would gain the profits of the smelter, which, he thought, were about the largest profits in the metal markets.

The CHAIRMAN then moved the confirmation of the resolutions which were carried at the meeting on the 25th ult. The resolution was seconded and carried unanimously.

Mr. KSENE claimed their indulgence just to say a few words. The resolutions having been confirmed, he therefore ceased any longer to hold the position he had held for four years, that of managing director of the Cambrian Mining Company. He did so with the full conviction he had worked honestly and done everything in his power not only to give every information but to do his share with the directors in working the mine economically and judiciously, his only hope being the mines should come to a successful issue. He did hope to have remained a director till that success had been attained, and he still believed in the genuineness of the mine, although he could not bring himself to believe it as good as Mr. Adams stated. Should it, however, be so he should be one of the first to congratulate Mr. Adams and the shareholders on his management. (Cheers.)

A SHAREHOLDER: You stated that you proposed not to use coal so much as peat; that is a very good idea, and will save a lot of carriage expense. May I ask if you will smelt the ore with the use of peat?——The CHAIRMAN: Yes, Sir, because the peat is better than coal. Coal contains a quantity of sulphur, and peat is free from it.

The CHAIRMAN, in reply to other questions, said they could get the peat as cheap as they could dig it and dry it. It was their own, and was nothing to do with the landlords.

A vote of thanks to the Chairman and directors then terminated the proceedings.

WHEAL BASSET.—At the meeting on Tuesday (Mr. W. McKeand in the chair) the accounts showed a loss on the six months' working of 3789*l.*, and a total debit balance of 4350*l.* A call of 1s. per share was made. Capt. W. C. Trevena, in concluding his report, says—"I may observe that when our 112 fm. level east is extended 40 fms. further we shall then have about 25 fms. to rise in the bottom of the western end of the South Carn Brea Mine, which, when communicated, will thoroughly ventilate the mine and open up, I trust, a large amount of tin ground, which, if only equal to our recent discovery, will lay open a lasting and profitable mine." The Chairman remarked that the committee were very pleased to meet the shareholders that day under a little more favourable circumstances than at the previous meeting. He hoped their prospects would continue to improve, and that they would not be required to put their hands in their pockets again. Mr. John Hocking asked whether they proposed to do anything to protect themselves against the risks of the Employers' Liability Act. Action had been taken in the matter at other mines, and he would like to know whether it was proposed to do anything at Wheal Basset.—Mr. W. Martyn, the purser, thought not. He did not see that there was anything to be gained by it. The insurers must get a profit out of it, and he thought it was well for the adventurers to do something for the men.—Mr. H. Waddington said if they could get an assurance company formed in Cornwall, and have it managed economically, it might be a good thing for the miners. Mr. Hocking had the prospectus of the Employers' Liability Assurance Company, with a capital of 1,000,000*l.*, 500,000*l.* of which was paid up, and Lord Claude Hamilton was the Chairman of directors. And most of the other directors were very large employers of labour, so that there need be no fear as to the company. In a mine of that extent, and even a larger mine, the risks under the Employers' Liability Act would be covered by the payment of 18*l.* a-year. Mr. Martin stated that Mr. Dennis, a large shareholder in East Pool, had written him some time since saying he desired that something of the sort should be formed, and that so far as he was concerned as a shareholder he would be willing to subscribe a certain price per ton of tin raised in every mine with which he was connected, if the lords could be induced to subscribe *pro rata*. He (Mr. Martyn) thought it only right that such a club should be established whereby the men would have that security they would all like to see. He, however, foresaw the difficulty that would have to be encountered, and consequently he told Mr. Dennis that he could not engage to do it.

LEVANT.—At the meeting, on Tuesday, the accounts showed a loss on the 16 weeks working of 590*l.*, and a total debit balance of 3395*l.* 16s. 10d. It was resolved that this balance be carried forward; that steps be taken to indemnify the shareholders from liability from accidents by insurance, and that the two agents be placed on an equality, at seven guineas a month, and that they be both held equally reponsible for the underground operations of the mine. Capts. H. Tresize and J. Thomas, in concluding their report, say—"We find that many of the ends are improved in value, and the stopes and tribute pitches are likely to produce a large amount of tin and copper during the next 16 weeks. Notwithstanding the very expensive work of driving the 278 end by boring machinery, which is costing nov less than 600*l.* per four months, it is expected that tin and copper enough will be raised during the next 16 weeks to meet all the costs of the mine.

SILVER PEAK MINING COMPANY.

The directors have just received from Mr. Joseph Taylor, the company's managing director, who is at present at the mines, a report containing such important information for those interested that they desire its publication in full. Writing from the Silver Peak Mines, Animas Forks, Colorado (Aug. 19), Mr. Taylor says:—

I only got complete possession of the company's property about a fortnight ago, and at once set myself about getting the machinery put in order, and secure a winter's supply of fuel and other necessary materials. Being late in the season I found a very great difficulty in securing a sufficient supply of timber for fuel, but think I shall accomplish this in a few days. I found it utterly impossible to get in the tunnel, in consequence of the air being so foul; but having got the engine and air-compressor repaired, this difficulty was overcome. I made a careful examination of the work done, and found that two lodes had been cut, one of which is over 40 ft. wide and streaked throughout with rich galena, grey copper, and mundic, some of the ores run very high in silver. These lodes have simply been cut through, but no exploration has been made thereon. I intend putting men to drive on the course of the lodes the early part of next week, and likewise continue the driving of the tunnel.

I have dialed and taken the level of the tunnel, and find that before we can resume the driving it will be necessary to strip down about 400 ft. of the solar, as instead of allowing a fall of about 7 in. in 100 ft., in some instances they have given as much as 3 ft. 1½ in. I never saw work done so badly as the last 400 ft. of this tunnel. I have also carefully examined the lodes at surface, some of which are very large, ranging from 8 ft. to 22 ft. wide, and containing high grade ore the whole width of the lodes. From an open cutting in the back of the Milwaukee lode we took out a few days ago blocks or solid ore, weighing from 1 to 3 cwt. each. When this lode is reached in the tunnel there will be about 1000 ft. of backs to stope away; and from a closer inspection of the various lodes, I am more than ever convinced of the immense value of the company's property. It is the universal opinion of all in this district that when fully developed the company will possess the largest and best property in San Juan county, an opinion in which I fully concur.

We have had such heavy rains every day but one since I have been here that I fear we shall be unable to get machinery up this fall. The road are almost impassable in many places, the bridges and miles of railroad have been washed away. I am in treaty for a smelter, which if I succeed in securing will save the company at least 1400*l.* I have bought large quantities of wood for fuel, but in consequence of the heavy rains we have been able to get but little of it up to the mines. I am endeavouring and think I shall succeed in making arrangements for next spring to dispense to a very great extent (if not entirely) with steam-power. I regret that the season is so far advanced as to preclude us effecting the change this year. I feel convinced that one year's cost in fuel will defray all the expenses of reservoirs—in the meantime underground development can be pushed forward.

PHŒNIX AND WEST PHŒNIX UNITED MINES.

A pamphlet containing special reports on these mines made at the beginning of June in compliance with the resolution of the general meeting of April 21 has just been issued to the shareholders. Capt. JOHN HOLMAN, of South Caradon (June 1), reports that in looking at the mine as a whole he cannot but pronounce it to be a valuable property, but if to be made more profitably productive should be worked on a more extensive scale by employing additional hands, and extending other levels by the use of boring machinery, which ought to be obtained. He recommends the laying open of the ground between the old sump shaft and the western mine. By this means the lode would be proved, the hauling and sending ore to surface would be facilitated, and the ventilation would be improved.

Capt. WILLIAM TAYLOR, of Glasgow Caradon, after referring to the various points of operation says:—In these mines extending about a mile on the course of the lodes opened to some extent from end to end, traversed by the cross-course, about which an abundance of mineral has been found in the adjacent mines (South and West Caradon), and in a good channel of ground, you have a very valuable property, and if vigorously worked by the use of boring machinery, &c., under judicious management, you should greatly increase your returns of tin, and pay good dividends to the shareholders. The mines are supplied with the best machinery for pumping, drawing, and stamping, equal to all their requirements for a considerable time to come.

Capt. WILLIAM GEORGE, of Marke Valley (June 3), amongst other things recommends the sinking of Hamilton's shaft without further delay. This is now to the 40, and when resumed should be urged on as fast as possible, as it would come down in the productive ground referred to. Here, he thinks, the 100 should be continued to meet with the 112 from the Western Mine, which is about the same level. This would not only give good ventilation, but increased facilities for breaking a larger quantity of stuff, keeping the stamps in full work, increasing the returns, and, he believes, considerably augmenting the profits.

Capt. JOSIAH THOMAS, of Dolcoath, in concluding his report (June 4), states that the 40 and one of the deeper levels might also be driven west of Ann's shaft by boring machinery, where there seems to be every probability of opening up a large quantity of productive tin ground. At some future time, if thought desirable, the 225 fm. level might also be driven by boring machinery east of Seccombe's shaft, under the tin ground, to the east of hydraulic shaft; but he hesitates to recommend this work to be done at present, as it would necessitate some considerable outlay in changing and enlarging the pitwork in Seccombe's shaft, which is not now large enough to ensure the deepest workings being kept drained in the winter months. Besides there is plenty of work to be done in the shallower levels in the western part of the mine, where he thinks it more than probable that a profitable mine can be laid open in much less time and at much less cost.

Capt. JOSEPH PRISK, of Phœnix United (June 13), reports that repeating the proposed introduction of boring machinery and air-compressors, he considers that soon after the same are at work the present monthly returns could be considerably increased. I should, he adds, be noticed that the present workings are for the most part, if not entirely, on one lode only; but there are two or three other lodes known to exist in these mines which, having regard to the proximity of such lodes to the great cross-course, near which great deposits of minerals have been met with in South Caradon, as well as in these and other mines, will probably prove as productive for either copper, tin, or both, if properly explored, as the main lode.

And last, though not least, Capt. JOHN TRUSCOTT, the principal resident agent at the mines (June 13), says that the great advantage of boring machinery in mining being now generally admitted, he would advise the immediate purchase and erection of at least two machines, in addition to the boring machine now nearly ready, for the more rapid development of the unwrought ground. The mine, he continues, has not looked better than at present for many years past. The present sales of black tin are averaging at the rate of about 30,000*l.* a year, and it is his opinion that if the proposed arrangements for the purchase of boring machinery, with the large number of additional hands that could be employed, and the more rapid development of the mines thereby effected, the returns will be very much increased, the profits thereby considerably augmented, and probably doubled.

GREAT POLGOOTH UNITED MINES—SPECIAL REPORT.

A Special Report by David Cock, M.E., made at the request of a shareholder, states that the Great Polgooth United Mines are situated in the parish of St. Austell, Cornwall, and are approached from almost any point by good roads. Acting in accordance with your instructions, he continues:—I was on the mine yesterday to examine and report on the above property. The known lodes are numerous and well-defined; some of them were extensively worked by the ancients. The Old Polgooth lode has been reached by means of an old level, which has been cleaned and repaired for a distance of about 70 fms. by the present company, who have thus exposed a very considerable quantity of tinstuff. In the level bridge rails have been fixed, forming a tramway for easy and cheap transit to the daylight. The lode, where found standing, is remarkably rich for tin. By continuing the present level about 20 fms. east, it is expected to reach the lode in new ground. This is important, and the work should be pushed forward with all possible speed; for when you have the whole lode in virgin ground you will, in all probability, have a continuous supply of high percentage tinstuff in large quantities.

Wragge's lode has been opened on, and shows promising indications of being a good lode. Wheeler's lode has been opened on at the adit level, from whence I drew samples of superior tinstone, and vanned the same to my satisfaction. The lode is at this point from 4 to 5 ft.; it has also been reached by the No. 1 shaft from surface at about 70 fms. east of the end of the level, and by

No. 2 shaft sunk at a point 150 fms. still further east. The character of the lode was unchanged at the three places both in quality and size. This lode is of such a decided nature that I am of opinion that it will improve as depth is attained, although its present richness would be satisfactory, and enable you to make large and profitable returns. Three other lodes have been opened on, and proved to be of the general character of the district, which has been celebrated for its mineral wealth.

You have a good 36-in. cylinder rotary engine, boiler, &c., complete, and stamps on the ground for erection. The engine-house is in course of erection; smithy, carpenter's shop, offices, &c., built of stone have been erected and roofed with slates. Considering the time the company has been in operation you have certainly made great progress. In a few months time the surface works will be complete, and you will then have no difficulty in declaring substantial dividends. I have the greatest confidence in the certainty of your recovering the fame of this good mine.

NEW GREAT WHEAL VOR—SPECIAL REPORT.

The agent writes: I have spoken previously of our shaft—No. 2—and told you what I expected of it. The result is better than my anticipations. It is a splendid lode, and is growing richer and larger every foot we sink. At this moment I would rather give 20*l.* per share than I would have given 1*l.* a few weeks ago when you and your friends were at the mine. The lode is indeed a beauty, and if it should hold out—and there is every reason to believe it will—increasing in size and value a few feet deeper, the same as it has for the last 3 or 4 ft., I do not know what the value will be at a further depth—say of 6 ft. We brought to surface, from the very bottom of the shaft, the richest parcel of tinstuff that has been brought up since the commencement of our operations. This remarkable and valuable lode is no deeper than 10 fms. from the surface and is in whole ground. At the bottom of the shaft it is much richer than at the top, and it steadily grows larger and richer as we go down. It is a wonderful lode.—*Sept.* 14,

WEST PATELEY BRIDGE LEAD MINES.

The report of the directors prepared for presentation at the meeting on Wednesday states that it is with extreme regret that the directors have to point to the very unsatisfactory result of the year's operations—at the date of the last annual report the chief point of production was the 56 fm. level, which was then yielding large returns with every appearance of permanence, unfortunately the anticipations formed of it have not been realised, the bearing portion of the lode cut off, and it has been unproductive for a considerable time. The directors have also been disappointed in their hopes of finding the Craven cross vein productive, and the two main cross-cuts have also proved disappointing, not having cut any of the numerous lodes, of which there are such favourable surface indications. Explorations to a limited extent are still being carried on, but as the mine is at present practically unproductive and with but little immediate prospect, it will be for the shareholders to decide upon the future of the company.

The accounts from February, 1876, to June 30 show that to produce ore of the value of 5320*l.* 18s. 4d. there has been expended in working cost 14,992*l.* 19s. 8d.; in working plant, rock-drills, &c., 766*l.* 5s. 10d.; and in directors' fees, offices expenses, &c., 1805*l.* 8s. 9d.; together, 17,564*l.* 14s. 3d. The assets (including 315*l.* 12s. 6d. unpaid calls) amount to 350*l.* 17s. 10d., and the liabilities to 544*l.* 3s. 11d., showing a deficiency of 189*l.* 6d. 1d.

In reporting upon the mine Capt. David Williams states that the lode in the 56 north, west of Craven Cross shaft, for some distance behind the end has proved unproductive, but as the level is now within a short distance of reaching the Gulph, one of the main cross-courses of the district, west of which the lodes in the adjoining mine, East Craven Moor, have proved most productive, and being in the centre of the best ore-bearing measures, and in entirely whole ground to surface, he looks forward with interest to any improvement here as a safe indication of another ore body in advance. During the last few feet of driving the ground is more congenial for the production of lead ore, and the vein wider. The cross cut north from the 20, east of No. 2 shaft, is in 7½ fms., and within about 8 fms. of reaching two lodes, both of which proved rich near the surface. They have two pitches at 100s. per ton of dressed ore. The machinery is in good order and working smoothly.

MISSOURI LEAD MINING AND SMELTING COMPANY.

The report of the directors, prepared for presentation at the meeting on Friday next, states that during the year 7,124*l.* 8s. 4d. has been expended in opening up and developing the mines—this amount is chargeable to capital, and as during these developments lead has been produced and sold, the accounts have been prepared so as to show the receipts and expenditure on revenue, apart from capital account. The first sale of lead was made in September, 1880, and the quantity sold up to June 30, 1881, realised 520*l.* 9s. 3d. Deducting from this sum the costs of mining, dressing, smelting, and marketing, and a proportion (say one-half) of the general expenses at the mines and in London, there remains a balance of profit of 49*7l.* 7s. 4d., which the directors propose should be carried forward to next year.

Although the output for the past year has been far below the expectation of the directors, it is encouraging to find that it has been sufficient to bear its proportion of the working expenses of the company during the period of development. The expenses of smelting and marketing the lead have been proved to be within the original estimate of cost; the expenses of mining have been hitherto so mixed up with those of developments that no reliable opinion can as yet be formed as to these, but the directors see no reason to expect that when the mine is properly opened out they will exceed the estimated amount.

The very severe weather in the winter greatly interfered with operations at the mine for a period of three or four months. The temperature was unusually low, the thermometer registering frequently 20° below zero. Although the underground works were carried on (with difficulty), all surface works were very much impeded. As mentioned in the circular of June 2, the directors, in order to provide a greater extent of stoping ground, gave instructions for sinking both the St. Clair and old engine-shafts 200 ft. deeper. The St. Clair shaft on Aug. 1 was down 60 ft. below the 315—that is, 375 ft. from surface, timbered with oak, divided, and ladder way fixed. At 400 ft. it is proposed to start new levels north and south on the ore body. The old engine-shaft at the same date was 100 ft. down below the 175 ft. level (the greatest depth of the old workings), deep enough for a new level to be started. The indications in both these shafts are very favourable; the shafts themselves are on the lode, the ground is soft, and is reported to be very promising for a run of ore. It is proposed, at an early date, to sink the Master chaft deeper, so as to open up more stoping ground here, as well as at the other main shafts.

Capt. Campion having resigned the position of mining captain, the directors have appointed Mr. Thomas Rickard (of the firm of Rickard Bros.), mining engineer to the company, with instructions on his arrival to make a thorough examination of the mines, and report to the board as to their condition, and what steps he would advise to be taken in the future working and development. Mr. Rickard arrived at the mines on Aug. 2 and immediately took charge of the works. The directors have received from him the following telegram:—"Plant arrangements good, requiring no great outlay to complete with needful force. Mine capable speedy development; report follows."

The number of preference or A shares issued at the date of the balance-sheet—June 30—was 3661; since then 157 shares have been taken up, making the total issued to the present time 3818. There still remains 682 unissued, and as further capital is required for the sinking of the shafts referred to above, and other works, the directors trust that those shareholders who have not already done so will see the desirability of taking up their *pro rata* proportion of the unissued shares, so as to enable the directors to open up the mines more vigorously, and put the property on a dividend paying basis as soon as possible.

Mr. R. C. Sands, the General Superintendent, reports upon the work done on the surface during the year ending June 30, and, in conclusion, says: The farming land is leased, and is mostly planted in maize, which will be gathered in October, the company receiving one-half the entire crop as a rental. Nearly 2500 cords of furnace wood, and upwards of 10,000 feet of hewn oak timber were cut from the estate during the year. A map is now being made of the estate of the company, showing the large and small timber, roads, springs, and farming land. In conclusion, I have to say that the company has on hand an ample supply of hewn oak timber for underground use, pine lumber, cord wood, iron and steel, mining tools, and supplies to meet present demands. The estates of the company have been carefully looked after during the past year, and no timber has been cut to waste. The buildings are all in repair, and all of the company's property is in perfect order.

WHEAL GEORGE.—The agent reports that the winze is now down 10 feet, and the lode continues as valuable as it was last week. Every foot sunk as yet has tended to develope the richness of the lodes.

COPPER ORES.

Sampled Aug. 31, and sold at Swansea, Sept. 13.

Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Betts Cove	160	6¼	£3 9 6	Union Ore	76	4½	£2 9 6
ditto	100	6¼	3 9 0	ditto	76	10	5 18 0
ditto	96	6½	3 7 6	ditto	75	10	6 0 0
ditto	96	6½	3 7 6	Berehaven	85	9¼	5 12 0
ditto	96	7¼	3 17 6	ditto	79	14	8 11 0
ditto	96	7¼	3 17 0	Tigrony Pre.	7	34½	20 17 0
ditto	96	7¼	3 16 6	Cronebane	3	53½	31 2 0
ditto	96	7¼	3 17 0	ditto	1	34¼	13 1 0
Union Ore	77	4½	2 9 6	Copper Slag	2	7½	4 1 0

TOTAL PRODUCE.

Betts Cove	776	£2818	18 0	Tigrony Precip.	7	£	145 19 0
Union	304	1277	1 6	Cronebane	4		111 7 0
Berehaven	164	1151	9 0	Copper Slag	2		8 2 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
P. Grenfell and Sons	137	£ 467 8 0
Nevill, Druce, and Co.	182	1057 5 0
Vivian and Sons	335	1,971 1 0
Williams, Foster, and Co.	307	980 12 6
Mason and Elkington	96	324 0 0
Landore Copper Company	200	692 10 0
Total	1257	£ 5,512 16 6

NO SALE Sept. 27.

TOTALS AND AVERAGES.

	21 cwts.	Produce.	Price.	Per unit.	Standard
Whole sale	1257	7¾	£4 7 8	11s. 3d.	£82 12 7

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine share-dealer, Redruth (Sept. 15), writes:—Our market has been very excited at times during the week, and fluctuations have been frequent and important. Dolcoaths have risen 10 on the week, Cook's Kitchen 5, Carn Brea 2, and Grenville 1, West Frances advanced 7 on a discovery on the great flat lode. South Croftys advanced from 8 to 14 on an improvement in the 205 west. Part of this advance has since been lost and price is 12½ to 12¾ to-day. Killifreths touched 2*l.* 11s., but again declined. West Kittys have fallen 1, through holders taking profits. The Cornish tin standards were raised 3s per cwt. on Saturday. Prices are as follows:—Blue Hills, 2½ to 3; Carn Brea, 27 to 28; Cook's Kitchen, 24¾ to 25¼; Dolcoath, 87½ to 88½; East Pool, 38¼ to 38¾; Killifreth, 1⅞ to 2; Mellanear, 4 to 4½; New Cook's Kitchen, 6½ to 6¾; New Kitty, 2⅞ to 3⅛; Penhalls, 1¾ to 1½; Pedn-an-drea, 4½ to 4¾; South Condurrow, 9¼ to 9½; East Blue Hills, ½ to ¾; South Crofty, 12¼ to 12¼; South Frances, 14⅜ to 14⅝; Tincroft, 18¾ to 19¼; West Basset, 14 to 14½; West Frances, 19 to 20; West Kitty, 9¾ to 10; West Peevor, 13½ to 14; West Poldice, 6 to 6¼; West Seton, 16 to 18; Wheal Agar, 14¾ to 15; Wheal Basset, 5 to 5½; Wheal Comford, 2 to 2½; Wheal Grenville, 10½ to 11; Wheal Peevor, 13¾ to 14; Wheal Kitty (St. Agnes), 1¾ to 2; Wheal Prussia, 1⅞ to 2⅛; Wheal Uny, 2¾ to 2¾; Wheal Boys, 2 to 2⅛; West Polbreen, 1½ to 1¾.

— Mr. J. H. REYNOLDS, stock and share broker, Redruth (Sept. 15), writes:—A good market for all the leading shares. Dolcoaths still rising, closing to-day at 86½ buyers, sharp cash, and 82½ for the account meeting. East Pools, West Frances, Carn Breas, also in demand at higher prices; closing at their best. Subjoined are the closing prices:—Blue Hills, 2¾ to 3; Carn Brea, 26¾ to 27¼; Cook's Kitchen, 24½ to 25; Dolcoath, 86½ to 87; East Pool, 38 to 38¼; East Blue Hills, ½ to ⅝; Marke Valley, 1 to 1¼; Mellanear, 4¼ to 4¾; New Cook's Kitchen, 6½ to 7; New Kitty, 2⅞ to 3⅛; Killifreth, 2 to 2¼; North Herodsfoot, 10s. to 12s. 6d.; Pedn-an-drea, 4¼ to 4½; Phœnix, 3½ to 4; Penhalls, 1½ to 1¾; South Condurrow, 9½ to 10; South Crofty, 12 to 12½; South Frances, 14¼ to 14½; South Tolcarne, 2 to 2½; Tincroft, 19 to 19¼; West Basset, 14 to 14¼; West Frances, 18¾ to 19¼; West Kitty, 9½ to 10; West Peevor, 14½ to 15; West Polbreen, 1½ to 1¾; West Poldice, 6 to 6½; West Seton, 18 to 19; Wheal Agar, 14¾ to 15¼; Wheal Basset, 5½ to 5¾; Wheal Boys, 2¼ to 2½; Wheal Grenville, 10½ to 11; Wheal Jewell, 8s. to 10s.; Wheal Kitty, 2 to 2¼; Wheal Peevor, 13½ to 14; Wheal Prussia, 1½ to 1¾; Wheal Uny, 2 to 2¼.

— Messrs. ABBOTT and WICKETT, stock and share brokers, Redruth (Sept. 15), write:—During the past week there has been a substantial rise in Dolcoaths, Cook's Kitchens, Carn Breas, South Croftys, West Frances, and Wheal Grenville, and the market closes at its best. With the present price of 100*l.* for English tin the leading mines will be able to pay very substantial dividends. Closing quotations annexed:—Blue Hills, 2½ to 3; Carn Brea, 26 to 27; Cook's Kitchen, 24½ to 25½; Dolcoath, 85½ to 86½; East Pool, 38¼ to 38½; New Kitty, 2½ to 3; New Cook's Kitchen, 6½ to 7; North Busy, ¼ to ½; Pedn-an-drea, 4½ to 4⅝; Santa Gertrude, 170 to 175; South Condurrow, 9¼ to 9¾; South Crofty, 12½ to 13; South Frances, 14¼ to 14½; Tincroft, 18¾ to 19; West Basset, 14 to 14¼; West Kitty, 9½ to 10; West Poldice, 6 to 6¼; West Peevor, 14 to 14½; West Frances, 19 to 19½; West Seton, 17 to 19; Wheal Agar, 14¼ to 15; Wheal Basset, 5 to 5½; Wheal Grenville, 10¼ to 10¾; Wheal Peevor, 13½ to 14; Wheal Prussia, 1½ to 2; Wheal Uny, 2 to 2¼; West Providence, 1¼ to 1½.

— Mr. M. W. BAWDEN, Liskeard (Sept. 15), writes:—The mining market has been exceedingly active throughout the week, the advance of 3*l.* on the tin standard has stimulated prices with but little disposition to sell Phœnix. United and South Crofty in demand. Business to-day mostly confined to the settlement. Subjoined are the closing prices:—Bedford United, 1⅞ to 2; Carn Brea, 28 to 28½; Cook's Kitchen, 22½ to 23⅜; Dolcoath, 79 to 80; Devon Consols, 8 to 8⅛; Devon Great United, 1 to 1⅛; East Caradon, ⅝ to ¾; East Crebor, ¼ to ⅜; East Herodsfoot, 1 to 1⅛; East Lovell, 1¾ to 2; East Pool, 37½ to 38; Gawton United, ⅞ to 1; Glasgow Caradon, ¾ to ⅞; Gunnislake (Clitters), 2⅞ to 3; Herodsfoot, ½ to ⅝; Hingston Down, 1 to 1⅛; Killifreth, 2 to 2¼; Marke Valley, 1 to 1⅛; New West Caradon, ½ to ⅝; North Herodsfoot, ½ to ⅝; Old Gunnislake, ⅜ to ½; Phœnix United, 4 to 4¼; Prince of Wales, ½ to ⅝; South Caradon 45 to 47½; South Condurrow, 9 to 9¼; South Crebor, ¼ to ⅜; South Crofty, 13½ to 14; South Devon United, 1¾ to 2; South Frances, 15½ to 15½; Tincroft, 19 to 19½; West Basset, 14½ to 15; West Caradon, 1 to 1⅛; West Frances, 12 to 12½; West Kitty, 9 to 9¼; West Mary Ann, 1 to 1⅛; West Peevor, 13½ to 14; West Phœnix, 1 to 1⅛; West Seton, 18½ to 19; Wheal Agar, 14 to 14½; Wheal Basset, 4¾ to 4½; Wheal Crebor, 3¾ to 3½; Wheal Grenville, 11 to 11¼; Wheal Hony and Trelawney, 2 to 2¼; Wheal Kitty, 2 to 2¼; Wheal Jane, ½ to ⅝; Wheal Peevor, 13½ to 14; Wheal Uny, 2½ to 3.

— Mr. JOHN CARTER, mine sharedealer, Camborne (Sept. 15), writes:—There is a considerable amount of excitement prevailing in the share market. At present prices are run up rapidly, and in a few instances to fall again just as quickly, our market turning sellers. As an instance South Croftys rose to 14*l.* per share on an improvement in the 205, and just as quickly declined to 11*l.* again, closing better at 12¾ to 12¾. There is an improvement at West Frances, and price has risen to 19 to 20. Dolcoath improved to 86 to 88, Cook's Kitchens were run up to 25½ when the market turned sellers directly as 25 to 24. Closing prices are annexed:—Blue Hills, 2½ to 2¾; Carn Brea, 26½ to 27; Cook's Kitchen, 24 to 25; East Pool, 38 to 38½; East Blue Hills, ½ to ⅝; Dolcoath, 86 to 88; Killifreth, 36s. to 38s.; Mellanear, 4 to 4¾; New Cook's Kitchen, 6½ to 6¾; New Kitty, 2⅞ to 3⅛; Penhalls, 1¾ to 1½; Pedn-an-drea, 1⅜ to 1⅝; South Caradon, 55 to 60; South Condurrow, 9½ to 9¾; South Crofty, 12¾ to 12¾; South Frances, 14¾ to 14½; Tincroft, 18¾ to 19¼; West Basset, 14 to 14¾; West Frances, 19 to 20; West Peevor, 14¼ to 14¾; West Poldice, 5¾ to 6¼; West Kitty, 9¾ to 10¼; West Seton, 17½ to 18½; West Polbreen, 1½ to 1¾; Wheal Agar, 14½ to 15; Wheal Basset, 4¾ to 5; Wheal Grenville, 10½ to 10¾; Wheal Kitty, 2 to 2¼; Wheal Peevor, 13 to 13½; Wheal Uny, 2½ to 2¾.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, sharebrokers Queen's Chambers, Market-street (Sept. 8), write:—The past week, from the occurrence of the fortnightly settlement and monetary influences, has been productive of business to only a very moderate amount, the latter cause ruling with more effect the market for rails and other leading securities. Shares generally termed miscellaneous have not produced many dealings, nor are there many instances of remarkable change in quotations. The continuance of dry weather has strengthened the hopeful feeling noticed on the fortunate cessation of rain; and though the autumn trade cannot be expected to fulfil the hopes indulged in before the rain commenced, it is looked forward to with some amount of confidence, giving a tone to the markets, in almost all classes of shares, which is far from desponding.

BANKS.—Since Friday last, on which a few lots changed hands, this market has been almost neglected as regards dealings, but figures are maintained all round, no adverse changes being marked, whilst Parr's Bank show a rise of ¾, and Bank of Bolton, A, ⅛.

INSURANCE shares, too, during the past week have shown very little activity either in the business done or changes of quotation. The transactions are mostly solitary. Alterations in prices are—Higher, Liverpool and London and Globe ½, Royal (Liverpool) ¼.—Lower: Thames and Mersey Marine 1/16.

COAL, IRON, AND MINING.—The only feature of importance herein is a sharp rise in Canadian Copper and Sulphur, which have sprung rapidly, finishing today at about best of the week. They have been done several times here at advancing quotations. Ebbw Vales, too, show a few dealings at prices of which the latest is the best. Bolckows, though little done in, maintain their figures. With these exceptions the changes in quotations are irregular, and do not show any decided tendency in either direction, or on any section of the class, except, it may be, in shipbuilding. Palmer's, A, and Earles, being both lower, the latter severely so. In the Indian gold mines South Indian are better, and Indian Phœnix show decline, the latter, however, now show rather above worst of the week. Higher: Tharsis Sulphur and Copper, ⅜; Canadian Copper and Sulphur, 6s.; Ebbw Vale Steel, &c., ¼; and South Indian Gold, ¼. Lower: Palmer's Shipbuilding, 4½; Earle's Shipbuilding, A, 1½; John Brown's, ½; Bilbao Iron Ore, ¼; Indian Phœnix Gold, ¼ (had been ⅜ lower); Patent Nut and Bolt ⅛; and Telegraph Construction and Maintenance, ⅛.

COTTON SPINNING AND MANUFACTURING.—The great majority of the trade have decided to suspend operations for one week, either for three days a week for two weeks, or a full week together, and to-night many mills will cease work, some having stopped to-day. It is hoped and believed this will have the effect of reducing the demand for cotton, and breaking up the "corner," which has been so detrimental to the trade, and as the time is approaching for new crop arrivals the effort is fully expected to be successful. The market for these shares keeps good, and generally fully maintained figures are the rule, whilst in a good few cases increased prices are asked and maintained.

TELEGRAPHS, though few lots have changed hands in this market, are better—Anglos particularly so, the ordinary being 2½, deferred 1½, and preferred 2 higher. Direct also ⅜; Eastern, ⅛; Globe ordinary, ⅛; and Western and Brazilian, 1/16 advanced; and the only decline is in West India and Panama, which are ⅛ lower.—CANALS remain unaltered.—CORPORATION, &c., STOCKS.—A few lots of Blackburn Corporation Stock have changed hands; otherwise this market has been quiet.—MISCELLANEOUS.—A decline of 1 in Union Plate Glass is the only variation of importance.

RAILWAYS.—This market exhibits a variety of changes, caused mainly, however, by the approach of the account and the withdrawal of 100,000*l.* from the Bank last Monday, since which there has been a decided recovery. Scotch stocks have been favourably influenced by the excellent traffics, and the anticipated good dividend on North British; but these and Caledonians are both easier this evening. Sheffields—particularly the deferred—quote distinctly better on an increased traffic this week, and close to-day good. The heavy lines mark an advance, and Southern lines having received some attention a rise is recorded. The Canadian market was unsettled until the announcement of the Grand Trunk traffic this morning (only 483 decrease, and Chicago and Grand Trunk 1300 increase), on which some buying took place, and prices to-night are about the best. Americans have responded to the improved prices from New York and easier money, resulting in an all-round improvement.

HULL.—Mr. W. FOWLER SUTTON, stock and share broker, St. Mary's Chambers (Sept. 15), writes—English railway stocks keep decidedly firm, and the bulk of them show improved values. The settlement passed off without difficulty, and in view of the very satisfactory traffic returns, the improving weather, and the arrangement of the Egyptian crisis, there would seem to be no reason why prices should not further advance, especially as stock appears to be getting gradually absorbed for investment. A 5 per cent. Bank rate is still highly probable, so far as can be seen, but the markets appear to be in a position to stand it, and will doubtless do so with ease should traffics be maintained as at present. Canadian rails have improved on the Trunk traffic to-day, which is more satisfactory than for many weeks past, and a substantial rise may occur at any time. American rails are also strongly disposed to creep up, and an end of the war of rates which cannot be long deferred on account of the closing of the lake navigation, would doubtless bring about a general and important rise. Local stocks without change. Hull Banks, 12½; London and Yorkshire, 33s.; Hull Docks, 85; Hull Trams, 9½; Earle's Shipbuilding, 35*l.* paid, 10; Hull and Barnsley Rails, 30s.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (Sept. 15), writes:—Since last report (Sept. 1) the markets have had an upward tendency, in sympathy with the improvement in the metal markets. Improving accounts of trade, along with the easier money market, and moderately fine weather, all seem to point to a further advance in prices and more active business.

In shares of coal, iron, and steel companies the movements for the fortnight comprise advances of 15s. per share on Bolckow, Vaughan; 10s. on Ebbw Vale, and 5s. each on Marbella, also Omoa and Cleland; but Clyde Coal have declined 1*l.* 7s. per share; Glasgow Port Washington, 11s. 3d.; Steel Company of Scotland, 6s. 3d.; and Chillington Iron 1s. 3d. In the Scotch pig-iron market the price of warrants has improved from 45s. 8d. to 49s. 3d. The prospects are decidedly more encouraging, as the revival which has set in cannot be ascribed to speculation, as there is a fair consumptive demand, although the stocks are very heavy. The appointment of a committee of the Middlesborough ironmasters to wait on the Scotch ironmasters, with a view to bring about an agreement to decrease the manufacture by about 25 furnaces in each district, is expected to lead to a good result. The Steel Company of Scotland has declared a dividend of 7s. 6d. per share, which is rather less than was expected. Alltami are at 25s.; Benhar, 11s.; Bolckow, Vaughan, 27¾ to 28; Cardiff and Swansea, 35s. to 40s.; Chatterley Iron, 5 to 6; Chillington Iron, 43s. 9d. Clyde Coal declined from 68s. 6d. to 44s., and are now about 49s. 6d. Ebbw Vale, 9; John Bagnall and Sons, A, 5s.; Lochore and Capeldrae, pref., 10 to 10½; Marbella, 6¾ to 7; New Sharlston Colliery, pref., 90s. to 100s.; Omoa and Cleland, 19s. to 20s.; and Steel Company of Scotland, 9 to 9¼.

In shares of foreign copper concerns prices have improved, Rio Tinto showing an advance of 1*l.* 10s. per share; Cape and Tharsis each, 1*l.*; Canadian 6s. 9d.; and Huntington, 3s. 6d.; but Panulcillo are easier at 5 to 5⅛. Canadian have improved from 25s. 9d. to 34s.; Huntington, from 2*l.* to 47s. 6d.; Rio Tinto, 21½ to 22; Santa Cruz, 10s. to 12s. 6d.; and Tharsis, 43 to 43¼.

In shares of home mines there has been more business doing, and prices have generally improved in sympathy with the metal markets. Glasgow Caradons are higher for the original shares about 20s. 6d., and the new shares at 12s. to 14s.; their next sale, on the 22nd inst., of 140 tons is for two months; while the last sale in July of 200 tons was for three months. Up to this time they have only sold half the quantity of ore, compared with the corresponding period last year; but it is to the chances of an important discovery at the mine, more than to the actual output at present, that attention is principally directed. Blaen Caalen are at 20s.; Blue Hills, 6os.; Cwm Brwyno, 11s. 3d.; Devon Friendship, 15s. to 20s.; East Caradon, 7s. 6d. to 12s. 6d.; East Devon Consols, 20s.; East Lovells, 30s. to 40s.; East Craven Moor, 7s. 6d. to 12s. 6d.; East Long Rake, 30s.; Fortescue, 5s. to 10s.; Great Polgooth United, 10s. to 15s.; Great Holway, 5 to 5½; Goodevere, 12s. 6d.; Gwydyr, 6s. to 7s.; Herodsfoot, 10s. 6d.; Indian Queens, 11s.; Killifreth, 37s. 6d. to 42s. 6d.; Lady Ashburton, 10s. to 15s.; Llanwrst (preference), 3s.; Mounts Bay, 7s. 6d. dis. to 2s. 6d. dis.; New Peevor, 15s. to 25s.; New Kitty, 50s. to 55s.; North Herodsfoot, 10s. 6d.; North Hendre, 5; North Busy, 10s. to 15s.; Old Shepherds, 3s. 9d. dis.; Pen-yr-Orsedd, 17s. 6d.; Pandora, 12s. 6d.; Parka Consols, 11s.; Rhosesmor, 55s. to 65s.; South Crebor, 10s. to 20s.; Silver Valley, 5s. dis.; South D'Eresby, 6s.; Tin Hills, 15s. to 20s.; Tresavean, 2s. 6d. to par; Tr vince Consols, 15s. to 20s.; United Shepherds Wheal Rose, 5s. dis.; West Holway, 35s. to 40s.; West Pateley, 2s. 6d. to 5s.; Wheal Fortune, 30s. to 35s.; and Wheal Jewell, 7s. 6d. to 10s.

In shares of gold and silver mines prices are generally lower. Richmonds have declined 25s., at 15¾ to 16¼; Alkanoo are about par; Australasian Mines, 5s.; Callao Bis, 12s. 6d. to 15s.; Exchequer, 1s. 3d. to 3s. 9d.; Gold Association of Canada, 15s. to 20s.; Gold Coast, 2s. to 4s. prem.; Indian Glenrock, 30s. to 35s.; Indian Trevelyan, 17s. 6d. to 22s. 6d.; Indian Consolidated, 15s. to 20s.; Indian Phœnix, 25s. to 27s. 6d.; Javali, 3s. to 5s.; Mysore Reefs, 32s. 6d. to 37s. 6d.; Nava de Jadraque, 10s. to 15s.; New Callao, 5s. dis. to par; New Gold Run, 5s. to 7s. 6d.; Quartz Hill, 12s. 6d. to 17s. 6d.; Rhodes Reef, 16s. 3d. to 18s. 9d.; and Scottish Pacific, 9⅜.

In shares of oil and miscellaneous companies prices have all improved. Broxburn (new) have advanced 2*l.* per share. Broxburn (old), 1*l.* 15s.; Uphall, 1*l.*; Young's Paraffin, 17s. 6d.; Walkinshaw, 10s.; Oakbank (new), 14s.; and Oakbank (old), 2s. The meeting of the Nitro-Phosphate Company will be on Oct. 5. The London and Glasgow Engineering Company have announced a dividend of 5 per cent., or 25s. per share, carrying over 271*l.* Droitwich Salt are at 25s.; Lawes Chemicals, 5¼ to 1/5; Newcastle Chemical, 50s. to 55s.; Uphalls improved from 8*l.* to 8*l.* 16s. 3d.

SHOTTS' IRON COMPANY.—At the meeting of this company on Sept. 14 the report submitted for year ended June 30 stated the demand for iron and prices thereof had, owing to the general quietness of trade, been under average. The works and plant are being maintained in a most efficient state. The amount at credit of profit and loss, including 5187*l.* balance from last year, is 18,567*l.* The dividend on the preference shares is only to be paid, 10,000*l.* written off for depreciation, and 8567*l.* carried forward to current year's account.

On Contango day (Monday) the following were the rates of continuation current:—Contangos: 1d., 2d. on Benhar Coal; 1d. on Canadian Copper; 9d. on Ebbw Vale; 2d. on Caradon; 1d., ½d., even, ½d. on Glasgow Port Washington; 3d. on Huntington; 3d. on Marbella; 1d. on Omoa; 6d., 7½d. on Panulcillo; 3d., 4½d., 6d. on Steel Company; 1s. 6d. on New; 1s. 9d., 1s. 7½d. on Tharsis; 6d., 9d., even on Uphall; and 6d. on Wheal Basset.—Backwardations: 3d., 6d., even, 1½d., 3d. on Clyde Coal; 1s. 3d., 2s., 1s. 9d. on Rio Tinto; and 3d., 1½d. on Oakbank Oil; even, Broxburn Oil and Young's Paraffin. On comparing the making-up prices fixed to-day for the undermentioned shares with those current at last settlement for the same shares the variations thus shown to have taken place during the account are as follows:—Broxburn Oil and ditto (new) have each advanced 30s. per share; Tharsis, 15s.; Rio Tinto and Walkinshaw, each 12s. 6d.; Uphall Oil, 10s; Omoa and Cleland, 5s.; Marbella Iron, Panulcillo, and Young's Paraffin, each 2s. 6d.; and Huntington, 6d. On the other hand Steel Company of Scotland have declined 28s. 9d. per share; Richmonds, 25s.; Clydes, 17s.; Glasgow Port Washington, 11s.; Tharsis, (new), 2s. 6d.; Canadian Copper, 1s. 6d.; and Benhar Coal, 1s. The remainder are unaltered—Glasgow Caradon and Oakbank Oil.

EDINBURGH.—Messrs. THOMAS MILLER and SONS, stock and share brokers, Princes-street (Sept. 15), write:—The latest traffics of the leading railways show a decided improvement nearly all round, and the market has become buoyant. North British stock has risen from 84¼ to 86; Glasgow and South-Western, from 115⅝ to 117½; Great North of Scotland, from 56⅝ to 60⅝; Highland, from 104 to 106. English stocks have likewise advanced. To-day's traffic return of the Grand Trunk of Canada, although showing a decrease, is looked on as favourable, and Canadian stocks have improved. American stocks are also decidedly better. Bank stocks and insurance shares have been quiet. There has been a good deal of excitement in some mining shares. Canadian Copper have risen from 25s. 6d. to 33s. 6d. Clyde Coal have fallen from 62s. 6d. to 54s. Oil shares have been firm. Broxburn have risen from 25¾ to 27¼; Oakbank, from 38s. 6d. to 40s.; Uphall, from 7⅞ to 8¼; Young's Paraffin, from 10½ to 11⅜.

IRISH MINING AND MISCELLANEOUS COMPANIES' SHARE MARKET.

DUBLIN, SEPT. 15.—Mines have been quiet, and fairly steady. Berehaven at 4s., and Killaloe Slate at 9s., are unchanged. Mining Company of Ireland, after having advanced 2s. 6d., dropped 5s., but subsequently rallied 1s. 3d. (to 2 5-16ths). Wicklow Copper have been firm, and are 3d. higher—at 8s. for time. Antrim Iron Ore, A, shares—5*l.* fully paid up—remain at 42s. 6d., and ditto, B, shares at 40s. Rails have been flat, with but comparatively little business doing. Great Northern of Ireland were very depressed, and receded 30s. (to 112½), but have since recovered 12s. 6d. Midland Great Western is down 15s., and closes fairly steady at 83¾. Great Southern has been steady, and at 109¼ is unchanged. Waterford and Limerick were dealt in at 35½, and Waterford and Tramore at 8. In preference securities Belfast and County Down Five per Cent. stock fell 5s., to 117; Belfast and Northern Counties Four per Cent. stock was dealt in at 101½; Watertord and Limersck Four per Cent. stock advanced to 98, from 96½. In leased lines Londonderry and Enniskillen stock were dealt in at 173. In debenture securities Belfast and Northern Counties Four per Cent. stock was dealt in at 107; Dublin and Wicklow Four per Cent. stock at 106½; Great Northern Four per Cent. stock at 110½. Great Southern and Western Four per Cent. stock advanced 10s., to 109½.

CORK.—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (Sept. 14), write:—Great Southern advanced to 109½ to-day, and Midlands were done at 82¼ ex-div.; Bandons were also asked for at 85; National Banks changed hands at 68¾; and Munsters at 7 3-16 to 7¼; Hibernians remain at 42¾ and Provincials at 60; Cork Steam Packets are 11 to 11⅛, and Dalys shares were asked for at 2⅜; Gas shares remain at 6¾ to 6¾; and Gouldings at 8⅜ to 9; Levys shares were offered at 6, and Harbour Board debentures asked for at 102¾.

Messrs. HARRINGTON, HORAN, and Co (Liverpool, Sept. 15).—During the past fortnight a very considerable business has been done in Chili bars, and value increased about 50s. per ton. The demand continues to-day at the enhanced rates. Since the above was written charters are reported to be 2900 tons. The aspect of the market has since changed, and at the close there are more sellers than buyers at a reduction of 5s. to 10s. per ton. In furnace material a good business has been done, and sales are as follows—2500 tons Quebrada ore at 11s. 9d., and 331 tons at 11s. 10½d., 100 tons Cape ore at 12s. 3d., 4,000 tons Newfoundland ore at Swansea and 100 tons here at 11s. 6d. for 7 per cent. produce, 56 tons Canadian regulus to arrive here at 12s., 115 tons Mexican ores at 12s., 20 tons English precipitate (50 per cent.) at 11s. 10½d., and 300 tons at 12s. 1½d., to 12s. 6d., 25 tons Mason's Spanish at 12s. 6d., and 354 tons (low produce) at 12s., 1000 tons Rio Tinto at 12s. 3d. to 12s. 6d., 200 tons regulus and precipitate at 12s., and at the Swansea sale by tender 1257 tons ores, average produce 7¾ per cent. realised 11s. 3½d. per unit. Import of Chili copper during the past fortnight 570 tons fine, against 2570 tons fine same time last year. Delivery of Chili copper during the past fortnight 1308 tons fine, against 1258 tons fine same time last year. Import of other copper during the past fortnight 546 tons. Delivery of other copper during the past fortnight 1500 tons.

UNITED SHEPHERDS WHEAL ROSE.—A petition has been presented to the High Court of Justice for the winding-up of this company.

Lectures on Practical Mining in Germany.

CLAUSTHAL MINING SCHOOL NOTES—No. CLXXIX.*

BY J. CLARK JEFFERSON, A.R.S.M., WH. SC.,
Mining Engineer, Wakefield.
(Formerly Student at the Royal Bergakademie, Clausthal.)

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SECTION VII.—CONVEYANCE OF MINERALS.

The perfection of the means of conveying minerals underground appears to be in an inverse ratio to the intrinsic value of the minerals. This is the natural outcome of the fact that the more valuable minerals are the rarer, and that no pecuniary advantage can be reaped by the employment of costly mechanical means of transport, unless the quantity of the mineral to be transported allows of a corresponding saving in labour. Hence underground conveyance reaches its highest development in the case of coal mines, and next in mining massive deposits of ironstone, pyrites, calamine, &c.

The first and perhaps most important rule to be borne in mind is "that no worthless material shall be moved unless really necessary, and then to as short a distance as possible." Hence, where possible, the worthless material should be separated from mineral whilst in the mine, and in the place in the mine where the mineral is got. Of course the sorting and separation should not be pushed too far in the mine, for the double reason that labour underground is more expensive than at the surface, and that with valuable ores some of the mineral may be thrown back amongst the attle. This rule is also applicable to coal mines, except in the case of mines very liable to gob fires. The second point of importance is that the mineral, where possible, shall be brought to the surface in the same vessel into which it is filled at the getting place.

Under this section is included surface and underground conveyance, and as an intermediate subject shaft conveyance.

UNDERGROUND CONVEYANCE.

All modes of underground conveyance of minerals may be divided into five classes.—1. Carrying.—2. With sledges.—3. With rolling stock.—4. With self-acting planes (by means of gravitation.—5. On canals.

1. CARRYING.—This is at once the oldest, simplest, most incomplete, and expensive mode of transport in the mine, whether performed by men, horses, or mules. At every step the load is raised to a height, according to Weisbach, 0·09375 times the length of the stride. According to Lottner the useful effect of carrying in the case of a man is from 35 lbs. to 50 lbs., at a speed of 1 ft. to 2 ft. per second. If the load is carried on the back, a man may carry as much as three-fourths of his own weight, at a speed of 1½ ft. per second. A horse will carry 240 lbs. at a speed of 3½ ft. per second, and may thus be accounted as equal to 12 men. If the road has a considerable inclination the useful effect may only be equal to that of three men.

The mineral is usually carried in trays, baskets, or sacks. The trays used in the Hartz mines are in the form of dishes, made from one piece of wood. They are rectangular, with rounded corners, and are notched in the middle of the two shorter ends on the under side, so that they can be firmly grasped by the miner. At Freiberg the trays are prismatic, and provided with projecting handles on the two shorter sides. In some districts the trays are formed of small pieces of 3-inch wood, connected together by iron hoops; whilst in others the tray is made entirely of sheet-iron. In England the use of trays is or was recently to be met with in the ironstone mines of the Forest of Dean, where the workings are of a necessarily irregular character. As both hands were employed in holding the trays, the miner fixed his candle in the cleft of a stick which he held between his teeth. The size of the trays naturally varies with the specific gravity of the mineral, being largest in the case of brown coal mines, and smallest in the case of lead mines. The mineral is usually filled into the trays by scraping. The scraper consists of a curved plate of iron, attached at right angles, and in the middle of its upper side to a wooden handle. The blade is considerably wider at the bottom than at the top, and has the concave side towards the handle. The depth is about half the length. The miner fills the tray by leaning it against his feet, and scraping the mineral towards him into the tray. The tray is carried either in the hands or on the head.

Formerly baskets were employed for transporting the coal in the Scotch mines. These were carried on the backs of women, or even girls, a leather strap attached to the basket passing round the forehead. In Freiberg the basket was used until very recently.

At St. Etienne the coal was carried in sacks, terminated in the form of a hood, on the head or shoulders of workmen, called sorteurs, who traversed the roadways barefooted, with a stick in the hand, which served to support the load when halting. The sacks are made of strong ticking. In Saxony the sacks are made of wicker-work, and in Spain leather sacks are used.

Transport by carrying may be said to be practised only in very rare and exceptional circumstances. It may be worth noting that in very ancient times the mineral was sometimes passed from hand to hand in the dark, lights being provided only for the miners at the working face.

2. SLEDGES.—The coefficient of friction for the shoes of sledges on the floor of a mine may be taken as 0·5, where a roadway of wood or stone is specially prepared the coefficient is about 0·38, if lubricants are used 0·15 to 0·07. The traction force of a man may be taken as 35 lbs. at a speed of 2 to 3 ft. per second, and that of a horse as 120 lbs. at a speed of 3¼ ft per second. The useful effect of a man or horse in drawing a sledge will, therefore, be obtained by multiplying the above by the reciprocal of the coefficient of friction. In nearly all cases where sledges are used they are drawn on the rock floor of the mine, and only where this is too soft or uneven is the sledge-way made of boarding. In some cases the sledge-way has been made of a pair of raised parallel wooden or iron rails. When the sledge-way has an inclination of under 5 degrees, or above 15 degrees, it seems advisable to use horses. Between these inclinations it is found very convenient to use manual power when the load is moved downwards. When the load has to be drawn up hill, and the inclination amounts to much above 10 degrees, the greatest useful effect will be obtained by passing the rope round a pulley at the top of the hill, so that the horse moves downhill whilst the load is drawn up. At the Saarbrücken Collieries the sledges used are made of oak, and are 4 ft. long by 2 ft. wide and 10 in. deep; the two longer sides, however, are prolonged downwards 4 in. beneath the bottom of the sledge, forming the shoe of the sledge, and are curved from end to end, and shod with hoop-iron. The body of the sledge also is bound with hoop-iron. A hook is attached to both ends of the sledge, so that it can be drawn from either end. The trammer passes the rope either over the breast or shoulders, and supports himself when bending forward pulling the sledge with a heavy stick. These sledges will carry about 4½ cwts. of coal, which can be increased to 10 cwts. by fixing additional side pieces, so as to make the sledge deeper. The actual effect is given as 10 cwts. drawn a distance of 96 yards 25 times in an 8-hours shift, by which two men are engaged, one of whom moves backwards downhill before the loaded corf, and the other behind the corf, having the rope passed round his body. The inclination of roadway is given as 8° to 10°.

In some districts the body of the sledge is distinct from the shoes, which are attached to a frame, on which the body of the sledge can be placed and removed. The use of sledges is confined to the working faces and the roadways leading directly to them, the mineral being turned over into large tubs on wheels for further transport.

A somewhat peculiar form of sledges, called rolling sledges, was formerly in use in the Saarbrücken collieries. These were made with a pair of wheels at one end and sledge shoes at the other. The sledge was provided with handles at the same end as the sledge shoes, and the wheels were placed not quite at the opposite end, but at a short distance from the vertical line and through the centre of gravity. When the motion of the sledge was too slow the trammer took part of the weight off the sledge shoes by raising the handles. When, on the contrary, the motion was too rapid the trammer let the full proportion of weight come upon the sledge shoes, or should necessity arise could also bring his own weight to bear through the handles on the sledge shoes.

In the Saarbrücken Collieries the sledge-way is formed by laying longitudinal bearers of 6 in. wood, supported on half-round sleepers, placed 3 feet apart. The longitudinal bearers carry wooden rails 2 in. high.

Sledges were formerly used in the North of England. Such a costly mode of transport necessitated the use of many shafts. The sledges were drawn along the floor or thill of the mine where it was hard; and where it was soft a "penning," composed of narrow pieces of deal, was laid down. One horse or a pony was always employed to draw one corf or basket at a time.

3. ROLLING TRANSPORT.—The oldest and simplest mode of rolling transport is that formerly practised in salt mines, where the salt was packed in cylindrical vessels, which were rolled along a set of parallel wooden or iron rails.

The next oldest and simplest method is, perhaps, the wheelbarrow. The wheelbarrow may be considered as a lever of the second kind, in which the weight is between the power and the fulcrum. The weight, therefore, to be supported by the person pushing the barrow will be equal to the load multiplied by the quotient of the distance of the centre of gravity of the loaded barrow from the axle divided by the distance of the end of the handles from the axis. The load includes also the weight of the barrow, and the centre of gravity referred to is that of the loaded barrow. The distance travelled, multiplied by the weight supported, gives the amount of work done in foot lbs. In addition to the above the rolling friction of the wheel and of the axle-pin, must be added to find the total work actually expended. On a hard even floor the total frictional resistance will not amount to more than 1-30th the weight carried by the wheel, and hence may be neglected for approximate calculations. When the roadway is inclined the work is increased. The increase of load is equal to the total weights multiplied by sine of the angle of inclination. This must be multiplied by the distance travelled to obtain the increase of work done. The proportion of the distance from the centre of gravity of the loaded barrow to the axle, to the distance from the end of the handles to the axle varies, according to Weisbach, between 1-5th and 1-3rd. Lottner gives the respective distances and proportion as 35 ins. and 60 ins. (7 to 12) at Saarbrücken, and 20 ins. and 54 ins. (10 to 27) at Freiburg, in Breisgau. From the above it will be seen, that the amount of work which can be performed with the wheelbarrow depends in no small degree on the properly proportioning the above distances, especially in those cases where the roadway has a considerable inclination.

* Being Notes on a Course of Lectures on Mining, delivered by Herr Bergrath Dr. VON GRODDECK, Director of the Royal Bergakademie, Clausthal, The Harz North Germany.

PREVENTING INCRUSTATION OF BOILERS.—The exact proportions of the materials from which the composition suggested by Mr. HERBERT PORTWAY, of Bradford, is made will slightly vary, as water in different districts contains more or less of the lime salts, and the nature of other impurities somewhat differ. What he has found by experiment to be a suitable proportion for most waters is—Water, 112 lbs.; Irish moss, 5 lbs.; soda, 20 lbs. and a small quantity of sandal wood. These materials are boiled together until well dissolved, and then strained. The composition is then ready for use in the form of a jelly, which readily forms a solution, and can then be injected into the boiler or other vessel along with the feed water. For marine boilers he grinds the legitimate proportions above stated of Irish moss and soda, and forms them into a fine powder, which is a novel form of boiler disincrustant.

THE COAL AND IRON TRADES.—An interesting little volume by Mr. THOMAS STUBB, jun., certificated colliery manager—The Coal and Iron Trades: past, present, and future—has just been issued (London: Colliery Guardian, Essex-street, Strand), and contains much information of value to certificated managers generally. The origin of coal, the ventilation of coal mines, the available area of workable coal, the profits of coal mining, details of coke manufacturing, coal haulage, and water pumping are among the subjects treated. It would, indeed, be difficult to treat more fully so many subjects as are mentioned in the book in so limited a space. The work gives evidence of considerable pains having been expended upon it.

KING'S COLLEGE RECORD.—The July number of this magazine, issued by the undergraduates of King's College, Windsor, N.S., well maintains its character for sound literary merit. A reminiscence of the dissecting-room will be of general interest to students, as will also a sketch by one who was plucked, and appropriately signs himself "D. F.," and other notices; and special reference may be made to the valedictory of W. B. King, B.A., which is in such good taste and so admirably written as to reflect great credit upon himself and upon the University to which he now says farewell as a resident, though not as a son.

HEATING FEED WATER.—An apparatus for heating feed water by steam has been invented by Mr. R. CUNDALL, of Thornton, near Bradford. He employs a case, pipe, or chest, either perpendicular or in any other position, into which steam is conducted. Inside this case, pipe, or chest is fixed a pipe, or series of pipes, through which cold water is passed to be heated, the steam passing around the outside of such pipes. The said pipes through which the cold water is passed is fixed inside the case, pipe, or chest in such a way as to conduct the water to be heated the whole or part length of case, pipe, or chest as many times as may be required, or may be put into the case, pipe, or chest in the form of a twist, screw, or coil. The inlet and outlet for the water may be in any place required. There is also an outlet for condensed steam at the lowest part of case, pipe, or chest.

HOLLOWAY'S PILLS.—Invalids distracted by indigestion and discouraged in their search for its remedy should make trial of this never-failing medicine. A lady, long a martyr to dyspeptic tortures, writes that Holloway's pills made her feel as if a burden had been taken off her. Her spirits, formerly low, have greatly improved; her capricious appetite has given place to healthy hunger; her dull sick headache has departed, and gradually so marvellous a change has been effected that she is altogether a new creature, and again fit for her duties. The pills may be administered with safety to the most delicate. They never act harshly, nor do they ever induce weakness; they rightly direct deranged, and control excessive action.

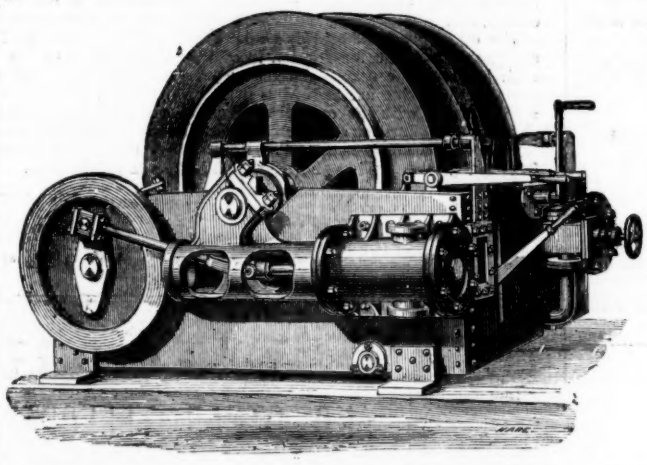
LONDON—1862. ESTABLISHED 1848. PARIS—1878.

W. BRUNTON AND CO.,
Penhellick Safety Fuse Works, Redruth,
AND
Cambrian Safety Fuse Works, Wrexham,
MANUFACTURERS OF
ALL KINDS OF SAFETY FUSE.
SILVER MEDAL (HIGHEST AWARD), MELBOURNE EXHIBITION, 1881, for
"EXCELLENCE OF MANUFACTURE."

CHILI—1875.

MELBOURNE—1881

STEVENS' PATENT UNDERGROUND WINDING ENGINE,
DESIGNED FOR USING COMPRESSED AIR OR STEAM.



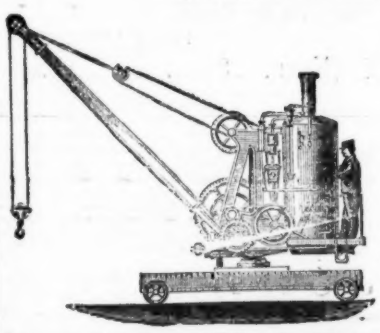
SIMPLE, COMPACT, PORTABLE.
Silver Medal, Royal Cornwall Polytechnic Society, 1876.

No. 1 size, 7 in. single cylinder, with 2 ft. drums.
No. 2 size, 9 in. single cylinder, 2 ft. 6 in. drums.
A,— 6 in. double cylinder, with 2 ft. 3 in drums
B,— 8 in. " " 3 ft. 0 in drums.
C,—10 in. " " 3 ft. 6 in drums.
D,—12 in. " " 4 ft. 6 in drums.
E,—14 in. " " 5 ft. 0 in. drums.

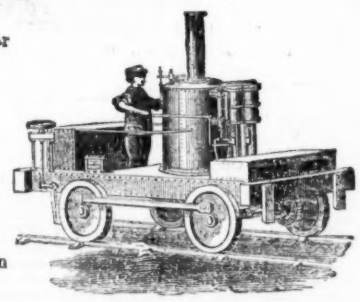
MANUFACTURED BY
THE USKSIDE CO.,
ENGINEERS, MAKERS OF PUMPING AND WINDING MACHINERY, AND FORGINGS OF EVERY DESCRIPTION.
NEWPORT, MON.

Agents for the six Northern Counties—
TANGYE BROTHERS, ST. NICHOLAS BUILDINGS,
NEWCASTLE-ON-TYNE.
[This Advertisement appears fortnightly.]

CHAPLINS' PATENT STEAM ENGINES AND BOILERS.
PRIZE MEDAL, INTERNATIONAL EXHIBITION



STEAM CRANES,
Portable or Fixed for Railways, Wharves, &c., for unloading
COAL, BALLAST, &c.,
from 5 cwts. to 30 tons.



LOCOMOTIVES,
6 to 27-horse power. For Steep Inclines and Sharp Curves.
Gauge from 2 feet upwards.
Geared to draw very heavy weights in proportion to their power, and SPECIALLY SUITABLE FOR
Contractors' Work, Railway Sidings, Coal Mines, Quarries, Gasworks, &c.
These Cranes were selected by H.M. Commissioners to receive and send away the Heavy Machinery in the International Exhibitions 1862, 1871, and 1872.
WIMSHURST, HOLLICK, & CO., ENGINEERS.
Works: REGENT'S CANAL DOCK, 602, COMMERCIAL ROAD EAST, LONDON, E. (near Stepney Station

PARIS, BRONZE MEDAL, 1867.

ORDER OF THE CROWN OF PRUSSIA.

FALMOUTH, SILVER MEDAL, 1867

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having xhibited the McKean Drill alone as the MODEL BORING MACHINE or the ST. GOTHARD TUNNEL.

SILVE MEDAL of the Highland and West of Scotland Agricultur Society, 1875—HIGHEST AWARD.

At .he south end of the St. Gothard Tunnel, where

THE McKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecu tive weeks, ending February 7, was 24·90, 27·60, 24·80, 26·10 28·30, 27·10, 28·40, 28·70 metres. Total advance of south heading during January was **121·30 metres, or 133 yards.**

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL: and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them value unapproached by any other system of Boring Machine.

THE McKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUNNELLING, QUARRYING, AND SUB-MARINE BORING.

The McKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical device. They contain the fewest parts—have no weak parts—act without SHOCK upon any of the operating parts—work with a lower pressure than any other Rock Drill—may be worked at a higher pressure than any other—may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines—will give the longest feed without change of tool—work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against and accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL, IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

McKEAN AND CO.

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HEPBURN'S PUMP LEATHER WATERPROOF

By a special method of preparation this leather is made solid, perfectly close in texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

HEPBURN AND GALE,

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LEATHER MILL BAND AND HOSE PIPE MANUFACTURERS

LONG LANE, SOUTHWARK LONDON

Prize Medals, 1851, 1855, 1878, for

MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

THE UNDERSIGNED, having secured the Grants of several VALUABLE MINERAL PROPERTIES (TIN AND COPPER), in the St. Blazey District, in the vicinity of Fowey Consols, &c., is DESIROUS of OBTAINING the CO-OPERATION of CAPITALISTS for their EXPLORATION. There is little or no risk involved in the undertakings, and the capital require in each case is very limited. R. SYMONS

11, Parade, Truro, 3rd February, 1881.

MAP OF CALLINGTON, CALSTOCK, AND TAVISTOCK MINING DISTRICTS.

Proposed to be published by subscription, a MAP of the ABOVE DISTRICTS, showing the names and boundaries of all existing setts, lodes, cross-courses, and every other matter which such a map should contain. Persons disposed to patronise the publication—at One Guinea per copy—will please send their names as early as possible to me. R. SYMONS, Mineral Surveyor, Truro.

February 3rd 1881.

TO PARENTS AND GUARDIANS.

AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and gain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

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32, Wellington-street, Toronto. Canada Land and Loan Agency.

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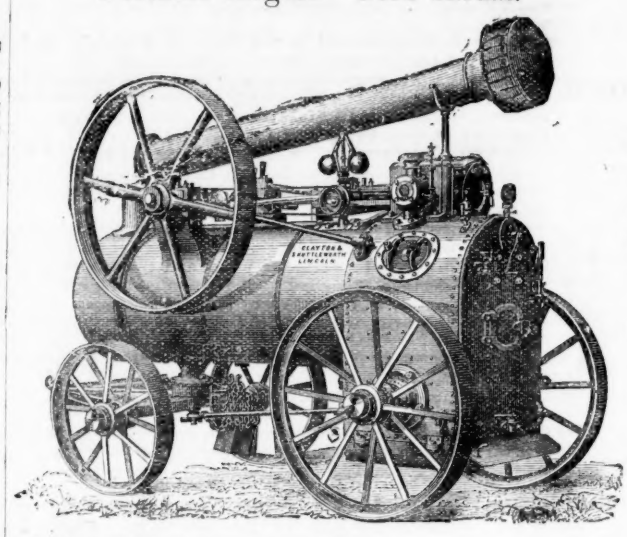
Portable Engine—Gold Medal. Thrashing Machine—Gold Medal.



☞ *The Royal Agricultural Society of England have awarded Every First Prize to CLAYTON and SHUTTLEWORTH, for Portable and other Steam Engines since* 1863, *and Prizes at every Meeting at which they have competed since* 1849.

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Have been awarded to CLAYTON AND SHUTTLEWORTH at the various International Exhibitions of all Nations, including LONDON, 1851, 1862; PARIS, 1855, 1867, 1878; VIENNA, 1857, 1866, 1873;

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STEAM ENGINES, Portable and Fixed

(For Coals, Wood, Straw, and every description of Fuel.)

THRASHING MACHINES.

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Catalogues in English and in all Continental Languages free on application.

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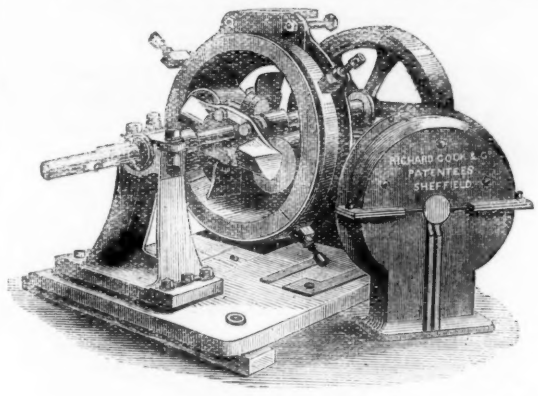


(Two tons per hour with 5 horse-power actual,)

For reducing to an impalpable powder, or to any requisite degree of fineness, all materials capable of being thus treated. CEMENT, CHEMICALS, GRAIN, COAL, COLOURS, PHOSPHATES, LIME, COPPER, TIN, ZINC, and other Ores with rapidity, completeness, and perfect uniformity.

THE ONLY GUARANTEED MACHINE FOR

GOLD QUARTZ.

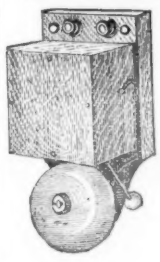
This mill consists of a circular iron casing, the section being elliptical in form, and is fixed vertically on a firm bed or foundation plate, a shaft runs through the centre of the casing on which is keyed a series of arms, in the extremities of which revolve two or more slightly oblong iron rollers, which, when put in motion, fly off from the centre and run upon the interior periphery of the casing, and by centrifugal force crush and pulverise the article under treatment.

The effect produced by this system is most extraordinary in its practical results, the power required is small in consequence of the comparative absence of friction from the working parts of the mill, the combined results of the rolling action of the crushers and their impact by centrifugal force on the material, being the same in kind, but in degree far exceeding that of edge runners, the sides of the casing are formed as open wire sieves of the degree of fineness required, and a series of propelling blades attached to and revolving with the central shaft drive the material under treatment through the sieves as it is pulverised; by this arrangement the degree of fineness can with certainty be arrived at from coarse to extreme fine, and that with uniformity

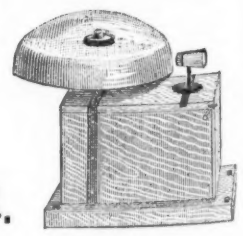
Intending purchasers can at all times satisfy themselves by sending the material they wish to operate on, and seeing it pulverised. Over 300 in use. Prices and testimonials free on application.

RICHARD COOK & CO., ENGINEERS, SHEFFIELD.

SAX'S ELECTRIC SIGNAL BELLS,



AND OTHER TELEGRAPHIC APPARATUS FOR MINES, &c.



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First Prize - - - Sydney, 1879.
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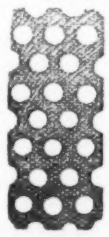

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Manufacturers by STEAM POWER of all kinds of Wire Web, EXTRA TREBLE STRONG for

LEAD AND COPPER MINES.

Jigger Bottoms and Cylinder Covers woven ANY WIDTH, in Iron, Steel, Brass, or Copper

EXTRA STRONG PERFORATED ZINC AND COPPER RIDDLES AND SIEVES

Shipping Orders Executed with the Greatest Dispatch.

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GOLD AND SILVER MEDALS AWARDED for Steam-Engines & Boilers, also the Special Steam Pump, and Compound Pumping Engine.

TANGYE BROTHERS AND HOLMAN,

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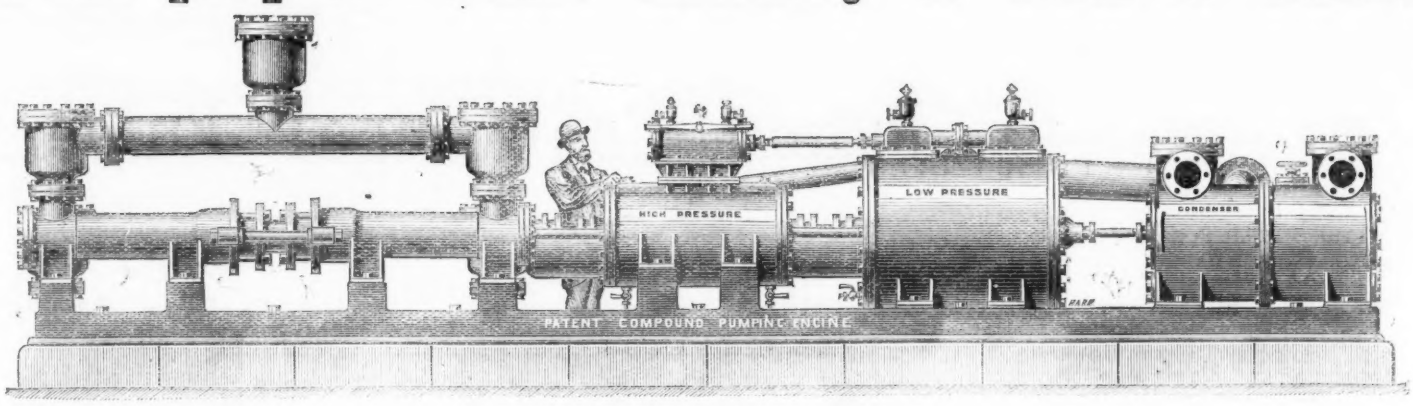
AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

TANGYE'S DIRECT-ACTING
COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,

And all purposes where Economy of Fuel is essential.



TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and General Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:—

TESTIMONIALS OF TANGYE'S COMPOUND PUMPING ENGINE.

21 Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879
36 × 10 × 48" COMPOUND CONDENSING STEAM PUMPING ENGINE
Messrs. Tangye Brothers.

GENTLEMEN,—In reply to your enquiry as to the efficiency of the two pairs of Compound Condensing Engines recently erected by you for this company at our Gateshead Pumping Station, I have great pleasure in informing you that they have far surpassed my expectations, being capable of pumping 50 per cent. more water than the quantity contracted for; and by a series of experiments I find they work as economically as any other engine of the compound type, and will compare favourably with any other class of pumping engine. By the simplicity of their arrangement and superior workmanship they require very little attendance and repairs, and the pumps are quite noiseless. A short time ago I had them tried upon air by suddenly shutting off the column, and found they did not run away, thus showing the perfect controlling or governing power of the Floyd's Improved Steam-moved Reversing Vale. I will thank you to forward the other two pairs you have in hand for our Benwell Pumping Station. Yours respectfully.

(Signed) JOHN F. FORSTER, Engineer.

21" The Chesterfield and Boythorpe Colliery Company (Limited), Registered Office, Boythorpe, near Chesterfield, Oct. 1, 1879.
36 × 12" × 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES
Messrs. Tangye Brothers. Supplied in January, 1878.

GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute=224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition. Yours truly,

(Signed) M. STRAW, Manager

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder ..... In.	[illegible]	8	[illegible]	6	[illegible]	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder ..... In.	[illegible]	14	[illegible]	18	[illegible]	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder ..... In.	[illegible]	5	[illegible]	5	[illegible]	7	8	6	7	8	10	7	8	10	12
Length of stroke ..... In.	[illegible]	24	[illegible]	24	[illegible]	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate	[illegible]	6100	[illegible]	6100	[illegible]	12,000	15,650	8,500	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Height in feet water can be raised with 40 lbs. pressure per square inch in cylinder ..... } Non-condensing..	360	230	160	360	230	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser...	480	307	213	480	306	245	187	480	352	269	173	480	367	234	162
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	600	417	306	235	600	440	337	216	600	459	293	203

CONTINUED.

Diameter of High-pressure Cylinder ..... In.	16	16	16	16	18	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder ..... In.	28	28	28	28	32	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder ..... In.	8	10	12	14	8	10	12	14	10	12	14	10	12	14	12	14
Length of stroke ..... In.	36	36	36	36	48	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate	15,650	24,450	35,225	47,950	18,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,950	35,225	47,950
Height in feet water can be raised with 40 lbs. pressure per square inch in cylinder ..... } Non-condensing..	360	230	160	118	456	292	202	149	397	276	202	518	360	264	562	41
Ditto ditto ditto—with Holman's Condenser...	480	307	213	154	603	389	269	198	528	363	269	691	480	352	750	550
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	191	750	486	337	248	660	450	337	864	600	440	937	689

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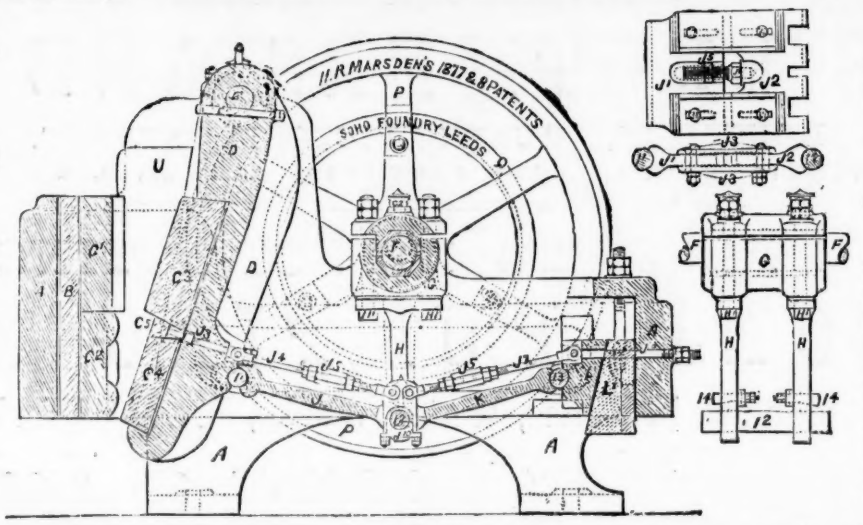

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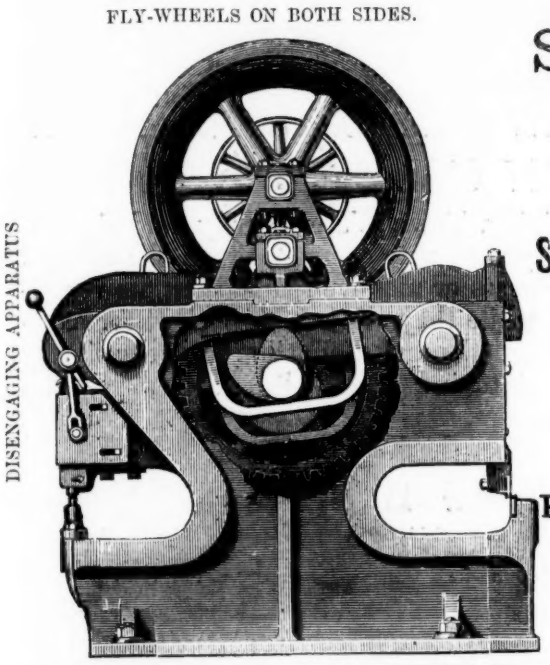

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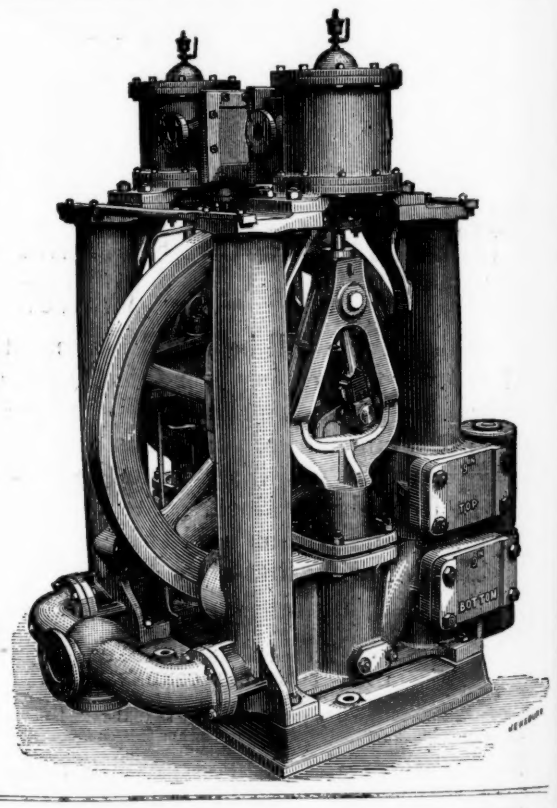

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